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ABSTRACT

This report describes the role of the Maternal and Child Health (MCH) Training Program in planning and supporting training designed to produce state, community, university, and professional association leaders who can advocate for children and mothers and continue to effect change that saves lives and enhances health. The Maternal and Child Health Bureau (MCHB), which supports the MCH Training Program, ensures that graduate programs and professional schools selected to receive training grants provide students and faculty with a focus on women and children (including infants and adolescents) in their teaching, research, and service. By attracting attention to children's needs within a public health framework that also emphasizes such MCH values as family-centered and culturally competent care, the program aims ultimately to influence all aspects of maternal and child health throughout the nation. The program supports a set of key leadership activities, all of which promote Title V goals. This report details the MCH Training Program's history and accomplishments in four areas: (1) training students for leadership; (2) developing new fields and providing information and expertise; (3) supporting faculty; and (4) enhancing collaboration. The report also includes a more in-depth discussion of two training priorities: adolescent health and leadership education in neurodevelopmental and related disabilities. The two case studies offer readers a snapshot of the MCH Training Program's evolution and where it stands today. (Appendices contain additional program information and fact sheets. Contains 36 references.) (EV)

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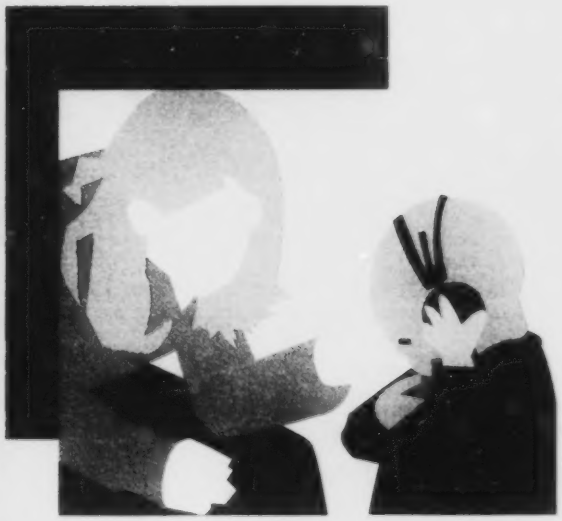
BUILDING THE FUTURE:

THE MATERNAL AND CHILD HEALTH TRAINING PROGRAM



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Building The Future:

The Maternal and Child Health Training Program

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Introduction

The dramatic improvements in children's health that we have witnessed in this century have occurred because *people* made them happen—people with skills, knowledge, and dedication. Although much work remains, for the first time in history, parents believe that each of their children can and should live a long and mostly healthy life. This report describes the role of the Maternal and Child Health (MCH) Training Program in planning and supporting training designed to produce state, community, university, and professional association leaders who can advocate for children and mothers and continue to effect change that saves lives and enhances health.

The Maternal and Child Health Bureau (MCHB), which supports the MCH Training Program, ensures that graduate programs and professional schools selected to receive training grants provide students and faculty with a focus on women and children (including infants and adolescents) in their teaching, research, and service—three pillars that must be firmly in place in any field before development can occur. By attracting attention to children's needs within a public health framework that also emphasizes such MCH values as family-centered and culturally competent care, the program aims ultimately to influence all aspects of maternal and child health throughout the nation. The program supports a set of key leadership activities, all of which promote Title V goals.

This report details the MCH Training Program's history and recounts its accomplishments in four areas:

Training Students for Leadership. The program teaches and motivates students to work throughout their careers to influence policy, develop additional programs, and conduct research.

Developing New Fields and Providing Information and Expertise. The program helps address the need for experts in emerging fields,

develops new service-delivery models, and disseminates new information broadly through continuing education and a variety of other mechanisms.

Supporting Faculty. The program provides support for faculty to give them time to participate in training and other activities designed to promote improvements in MCH.

Enhancing Collaboration. The program fosters teamwork and allows different fields and organizations, as well as health professionals and parents, to learn from one another, thereby hastening improvements in MCH.

The report also includes a more in-depth discussion of two training priorities: Adolescent Health, and Leadership Education in Neurodevelopmental and Related Disabilities (LEND). These two case studies offer readers a snapshot of the MCH Training Program's evolution, and of where it stands today.

TABLE 1:
MATERNAL AND CHILD HEALTH BUREAU TRAINING PROGRAM PRIORITIES, FY 1999

PRIORITY	NO. OF PROJECTS	PRIORITY TOTAL
Interdisciplinary Program Priorities and Schools of Public Health		
Adolescent Health Prepares trainees in a variety of professional disciplines (physicians, nurses, social workers, nutritionists, and psychologists) for leadership roles and strives to ensure a high level of clinical competence in the provision of care to adolescents.	7	$2,4[illegible],650
Leadership Education in Neurodevelopmental and Related Disabilities (LEND) Provides for leadership training in the provision of health and related care for children with developmental disabilities and other special health care needs, and for their families. Core faculty and trainees typically represent the following disciplines: pediatrics, nursing, public health social work, nutrition, speech language pathology, audiology, pediatric dentistry, psychology, occupational therapy, physical therapy, health administration, and, most recently, parents of children with neurodevelopmental disabilities.	35	$18,209,598
Pediatric Pulmonary Centers Prepares health professionals in the areas of pulmonary medicine, nursing, nutrition, pharmacy, respiratory therapy, and social work for leadership roles in the development, enhancement, or improvement of community-based care for children with chronic respiratory diseases.	7	$2,153,682
Schools of Public Health Supports the development and enhancement of MCH content, expertise, and training in schools of public health and helps make MCH resources available throughout the nation.	13	$4,506,411
Unidisciplinary Program Priorities		
Behavioral Pediatrics Focuses attention on the behavioral, psychosocial, and developmental aspects of general pediatric care by supporting fellows preparing for academic leadership roles in behavioral pediatrics.	9	$1,186,347
Communication Disorders Provides graduate training for speech/language pathologists and audiologists who plan to assume leadership roles in MCH programs in the areas of education, service, administration, and advocacy related to communication disorders.	3	$434,236

TABLE 1 (CONT.):
MATERNAL AND CHILD HEALTH BUREAU TRAINING PROGRAM PRIORITIES, FY 1999

PRIORITY	NO. OF PROJECTS	PRIORITY TOTAL
Historically Black Colleges/Universities Trains medical fellows, residents, medical students, and others to provide community-based primary care services relevant to MCH, especially to minority or other underserved populations.	4	$685,955
Nursing Provides postprofessional graduate training in nurse-midwifery and in maternity, pediatric, and adolescent nursing to prepare nurses for leadership roles in community-based health programs.	6	$953,619
Nutrition Prepares nutritionists/dietitians for leadership roles in public health nutrition with an emphasis on MCH; provides clinical fellowship training in pediatric nutrition; trains obstetricians, pediatricians, nurses, and nutritionists/dietitians to enhance their leadership skills in order to improve the nutritional status of infants, children, and adolescents.	6	$1,058,660
Pediatric Dentistry Provides postdoctoral training for pediatric dentists planning to assume leadership roles in the areas of administration, education, advocacy, and oral health services.	2	$462,653
Pediatric Occupational Therapy Provides postprofessional graduate training for pediatric occupational therapists planning to assume leadership roles in the areas of education, research, service, administration, and policy and advocacy to meet the needs of the MCH population.	3	$398,227
Pediatric Physical Therapy Provides postprofessional graduate training for pediatric physical therapists planning to assume leadership roles in MCH programs.	3	$398,099
Social Work Prepares social workers for leadership roles in programs providing MCH services, through graduate programs or joint-degree programs.	3	$399,995
Short-Term Training/Continuing Education Priorities		
Continuing Education* Offers programs through institutions of higher learning to facilitate the timely transfer of new information, research findings, and technology related to MCH, and to update and improve the knowledge and skills of MCH professionals.	37	$2,092,943
Grand Total	138	$35,361,075

** The following two continuing education priority grant categories are not included in this evaluation: Emergency Medical Services for Children (8) and Cooperative Agreements (4). Emergency Medical Services for Children grants are funded through MCHB's Injury and Emergency Medical Services Branch, and thus are outside the scope of the MCH Training Program, which is funded through the Division of Research Training and Education. Because NCEMCH is among the policy center cooperative agreements funded through MCHB's Training Program, these grants (NCEMCH, Johns Hopkins University, University of California at San Francisco, and University of California at Los Angeles) are also excluded from the evaluation. (See Appendix E for fact sheets on each of these MCH Training Program priorities.)*

The MCH Training Program portfolio currently consists of a total of 138 grant-funded projects in 14 priority areas (also called program priorities), as displayed in Table 1. The total dollar commitment in FY 1999 was $35.4 million.

The Development of a New Focus on Child Health

The MCH Training Program traces its origins to projects supported through the Sheppard-Towner Act of 1922, which was administered by the Children's Bureau. This act, which created the first federal grant-in-aid program to states, provided funds that states could use to improve children's health and reduce the rate of infant mortality. States discovered that they could do little in these areas without people who had the necessary training, so some of the funds appropriated under the act were used to provide nurses with tuition, a per diem, and 1-year sabbatical expenses while they participated in specialized training courses. Thus, the first MCH training program was born.

Critics of the controversial Sheppard-Towner Act labeled it "radical" and "socialistic." It was opposed by the Catholic Church, which saw it as interfering in family life; the American Medical Association, which was concerned about women providing basic health care; the Public Health Service, which assumed that the Children's Bureau was using the act to encroach on its turf; and others. The act was finally repealed in 1929; however, many states that had been providing training for nurses continued to do so even when federal funds were no longer available.

Through Title V of the Social Security Act (SSA), which passed in 1935, Children's Bureau staff were once more able to work toward improving child health. In the 1930s, the Bureau offered short courses for nurses, social workers, and physical therapists, and, in collaboration with medical societies, for obstetricians and pediatricians. These courses were conducted at medical centers where actual experience (field placements) could supplement lectures. Then, as now, child advocates viewed special training in MCH as critical to improving the health of mothers and children because traditional training for health care practitioners tended to ignore or, at best, give scant attention to the special needs of children and mothers. In order to provide mothers and children with the necessary

PROGRAM TIMELINE

Date	Legislation	Activities/Comments
1921	P.L. 67-97	Sheppard-Towner Act provided first maternal and child health (MCH) grants-in-aid to states.
1922		Nurses' training funded with Sheppard-Towner funds.
1935	P.L. 74-271	Social Security Act, Title V MCH formula grants to states.
1936		Thirteen states, cooperating with state medical societies, conducted courses under MCH state plans.

specialized attention, health care practitioners required additional training.

Continuing education training was also provided under Title V. For example, after a Children's Bureau researcher discovered a method for preventing rickets, the Bureau launched continuing education programs across the country to train physicians, nurses, and public health workers in how to use a combination of sunshine and cod liver oil as a preventive measure. As a result, this debilitating childhood disease was quickly conquered.

In 1947, the first federally funded long-term MCH training programs at universities were established. Four universities—Harvard University, the University of California at Berkeley, the University of North Carolina, and Johns Hopkins University—received grants from the Children's Bureau to establish MCH departments within their schools of public health. These departments' primary goal was to train administrators with a public health and child/family focus for the new programs being developed in the states under Title V. Students in the MCH departments had already received a degree in their respective disciplines (e.g., an M.D., R.N., or M.S.W. degree), so the additional training they were now receiving would enhance the expertise they already possessed. The second group of federally funded long-term MCH training programs focused on children with mental retardation and were housed in university-affiliated facilities (UAFs). The goal of these programs (now referred to as Leadership Education in Neurodevelopmental and Related Disabilities [LEND]) was to develop interdisciplinary clinical training centers to best serve the needs of children with mental retardation and their families. These programs also played a pivotal role in influencing national attitudes toward children with developmental disabilities.

The Birth of the Leadership Training Concept

The concept of a three-pronged approach—one consisting of research, training, and service—to improving the health of women and

PROGRAM TIMELINE

Date	Legislation	Activities/Comments
1939		**Thirty-nine states conducted courses for obstetricians, pediatricians, nurses, social workers, and physical therapists at medical centers where actual experience could supplement lectures.**
1939		**MCH reserve B funds used for specialty graduate training in institutions of higher learning.**
1947		**First schools of public health training grants were funded at Harvard University, Johns Hopkins University, University of North Carolina, and University of California at Berkeley.**

children was initiated in the Children's Bureau's early days. Policymakers believed that if all three prongs worked in concert, the greatest advances could be made. Clinicians and program managers would identify problems, researchers would seek solutions, and health professionals would be trained to implement the solutions.

Since MCH training funds were scarce relative to the demand for them, the Children's Bureau made a strategic decision: It would train leaders who would secure positions of authority (especially in state MCH programs) from which they could implement child-oriented policies and advocate on behalf of children and mothers. The Bureau also understood that thousands of practitioners—nurses, doctors, and other health care personnel—needed training if children and women were to receive adequate services and care. So the program strove to train academicians who would integrate MCH concerns into their disciplines and pass their knowledge to students who would later become practitioners. The Children's Bureau philosophy of linking training to practice translated into a requirement that these first training programs provide state program administrators and other public and private practitioners with consultation and technical assistance, as well as with continuing education.

The MCH Training Program has been administered through a variety of agencies throughout its history. The program was initiated by the Children's Bureau and is currently part of MCHB, Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services. To avoid confusion, this report uses "the MCH office" as a generic term referring to the government office that oversaw MCH (Title V) activities at the point in time being discussed. (See the Program Timeline on the following pages for a more detailed description of the various agencies that have administered Title V programs.) In addition to the central MCH office, regional field offices have also been influential in developing the program.

PROGRAM TIMELINE

DATE	LEGISLATION	ACTIVITIES/COMMENTS
1949		**Regional Congenital Heart Disease project was funded at Johns Hopkins University via the Maryland Health Department.**
1954–55		**Children's Bureau began to fund mental retardation diagnostic clinics in California, Hawaii, the District of Columbia, and the state of Washington.**
1957		**Congress set aside part of the Children's Bureau budget to serve children with mental retardation. One million dollars in discretionary funds were used to fund projects to educate the public/professions. One million dollars in state funds established diagnostic, consultation, and education (D&E) clinics for children thought to have mental retardation.**

The Identification of Specific Training Priorities

MCH training priorities have developed primarily as a result of interaction between MCH staff and the field. For example, state or community MCH agency staff could identify a need, discuss it with federal MCH staff, and submit a field-initiated proposal to the central MCH office. The proposal was reviewed and, if approved, funded. Other times, when a new issue or problem arose, MCH staff convened a group of knowledgeable persons to identify ways to address it, and to generate a consensus about the role of training in dealing with it. MCH staff might then develop a request for grant applications, which were competitively reviewed. Alternatively, they might approach the problem in other ways—for example, by holding conferences and disseminating information.

From the early days of the Children's Bureau to the present, Congress has taken a strong interest in the MCH program and its training activities. During the early Children's Bureau days, Congress had to approve any internal studies that staff wanted to conduct. Later, Congress would earmark funds for special issues through the budget process or would suggest in the appropriation "report language" issues to be addressed. Congress sometimes established a particular priority for the Bureau. Personal preferences of Congressional members or their key staff could lead to such directives, or the priorities could be set in response to successful lobbying. Thus Congress has played a significant role in the development of the MCH Training Program.

The role of MCH regional and central offices in administering the MCH Training Program has changed over time. Once priority areas were determined by expert panels convened by the MCH central office, assessments of and modifications to the programs were made through regular interactions between grantees and MCH central and regional office staff. Before 1960, grants were awarded directly to the states; therefore, regional offices tended to be more closely tied to training activities occurring in the states. In 1960, through P.L. 86–778, the Children's Bureau began directing grants to institutions of

PROGRAM TIMELINE

Date	Legislation	Activities/Comments
1960	P.L. 86-778	**Children's Bureau was given authority to provide grants directly to public or other nonprofit institutions of higher learning for special projects of regional or national significance.**
1961		**President Kennedy established the Presidential Panel on Mental Retardation.**
1963	P.L. 88-156	**MCH and Mental Retardation Planning amendments doubled the authorization of the MCH State Grant Program and authorized section 508 grants for Maternity and Infant Care "to help reduce incidence of mental retardation caused by complications associated with childbearing."**

higher learning. Administering training grants then became an official central office responsibility. When travel dollars and staff at the regional and central offices were more plentiful, staff conducted site visits to training programs to provide grantees with technical assistance and consultation. Over time, however, the program continued to grow, and the funds for administering it kept diminishing. At one point, there was a single project officer for all the grants. As a result, in the 1980s and 1990s, technical assistance and consultation were provided to grantees through reviews of continuation applications, regular telephone contact, and annual grantee meetings. Site visits are conducted infrequently.

To date, no national, systematic needs assessment has been performed to identify MCH training priorities. However, reviews of individual training priorities have occurred regularly. For each existing priority, state Title V directors, current grantees, national professional organization representatives, representatives from other federal training programs, and other MCH experts meet at least once during the course of the 5-year grant period. Meeting participants review the importance of the particular priority and suggest changes. They may recommend minor changes, such as modifying the guidance to emphasize one component over another, or major ones, such as phasing out the priority altogether.

MCH Leadership Training: A Unique Approach

The goals of the MCH Training Program, as well as its trainees and its approach, are quite different from those of the federally funded training programs described below.

The National Institutes of Health (NIH) supports predoctoral, postdoctoral, and short-term training experiences by providing institutions with training grants to develop or enhance research opportunities for individuals interested in careers in specified areas of biomedical and behavioral research. The institutions use these grants to educate young academics in such areas as research design, methodology, and statistical analysis. The goal of such training is to increase the number of

PROGRAM TIMELINE

Date	Legislation	Activities/Comments
1963	P.L. 88-164	**Mental Retardation Facilities and Community Mental Health Centers Construction Act established research centers, university-affiliated facilities (UAFs), and community facilities.**
1965	P.L. 89-97	**Children's Bureau was given authority to fund interdisciplinary training for health and related care of crippled children, particularly children with mental retardation and children with multiple handicaps. Ten percent of the total Children's Bureau appropriation was to be spent on research and training.**
1965–67		**The program initiated adolescent seminars and, 2 years later, adolescent-medicine projects.**

proficient basic and clinical researchers. The agency also advances faculty development through support for leadership training of junior-level faculty interested in introducing or improving curricula to enhance an institution's educational or research capacity.

Meanwhile, the Bureau of Health Professions (BHPr) within HRSA is responsible for ensuring that the supply of health professionals meets the nation's health care needs. In many ways, BHPr's training goals are similar to those of the MCH Training Program. Both sets of goals include, among other things, promoting a health care work force that can deliver cost-effective, quality care; supporting educational programs' ability to meet the needs of vulnerable populations; and increasing cultural diversity in the health professions. BHPr's funding of education and training programs in areas such as medicine, nursing, dentistry, public health, and health administration increases the number of persons trained in these fields and, in particular, allows for the training of health professionals for underserved or medical-shortage areas, such as rural or inner-city areas. BHPr has also recently adopted a more public health–oriented approach to training. Over the past 8 years, the agency has funded Public Health Special Projects, which are designed to further the Healthy People 2000/2010 objectives related to preventive medicine, health promotion and disease prevention, improved access to and quality of health services in medically underserved communities, and reduced incidence of domestic violence. These projects focused on distance learning and continuing education, curriculum revision, and increasing the emphasis on areas of emerging importance in public health.

Although the MCH Training Program shares certain features with these other federal training programs, the former is unique in one particular respect: its focus. The MCH Training Program, with its emphasis on specialized, child-oriented training, was specifically designed to enhance health professionals' ability to (1) meet the special needs of children and of women of childbearing years and (2) become leaders in their fields.

PROGRAM TIMELINE

DATE	LEGISLATION	ACTIVITIES/COMMENTS
1969		**Children's Bureau was dismantled. Title V moved to Public Health Service: Maternal and Child Health Services (MCHS), Health Services and Mental Health Administration, Public Health Service, the Department of Health, Education and Welfare.**
1970	P.L. 91-517	**Developmental Disabilities Services and Facilities Construction Act expanded the scope and purpose of P.L. 88-164. The term "developmental disability" was first introduced in statute. State formula grant programs were put in place. States were required to establish developmental disability councils to integrate activities of many agencies serving those with developmental disabilities.**

Building on the Past, Looking Forward

This brief overview documents the MCH Training Program's consistency of purpose throughout its history. Over the years, thousands of students, many of whom have gone on to illustrious careers in the public health field, have completed their studies with the help of MCH Training Program funding. Many people believe that the work of these graduates has advanced MCH program and policy development and has resulted in improved child health. As new problems—child abuse, AIDS, violence—have emerged over the years, the MCH Training Program has developed and disseminated new strategies to address them. The program will continue to evolve as MCHB

PROGRAM TIMELINE

Date	Legislation	Activities/Comments
1973		**MCHS reorganized into the Office of MCH and the Division of Clinical Services (DCS), the latter of which was responsible for Title V set-aside projects. The Office of MCH and DCS were both part of the Bureau of Community Health Services, Health Services Administration, Department of Health, Education and Welfare.**
1975	P.L. 94-142	**Education of All Handicapped Children Act gave children with disabilities the same rights as all other children to free and appropriate education in the least restrictive environment possible.**
1978	P.L. 95-602	**Rehabilitation, Comprehensive Services, and Developmental Disabilities Amendments of 1978 amended the Developmental Disabilities Act. Developmental disabilities were now defined by functional status, not by category.**
1981	P.L. 97-35	**MCH Services Block Grant was initiated. A 15 percent set-aside included funds to support, among others, pediatric pulmonary centers, genetic disease projects, and training projects.**
1982		**Offices of MCH and DCS were recombined into the Division of MCH, Bureau of Health Care Delivery Assistance, Health Resources and Services Administration, Department of Health and Human Services (DHHS).**
1982		**Surgeon General's Workshop on Children with Handicaps and Their Families took place.**
1986		**Behavioral Pediatrics projects established to train academic leaders, faculty, and researchers.**
1986	P.L. 99-457	**This law expanded the Education of All Handicapped Children Act by mandating community-based, family-focused, comprehensive, interdisciplinary services for infants and toddlers from birth to age 2 with developmental disabilities.**

establishes new priorities, such as oral health and racial and ethnic disparities in health.

The collaborative approach to health that the training program has modeled and encouraged has broken down the barriers that tend to slow innovation and impede communication. Although each program area has a special history with unique challenges and opportunities, all training priorities focus on training for leadership. This emphasis on leadership training appears to be appropriate for a relatively small program with a large agenda.

The following sections discuss four of the MCH Training Program's most important areas of emphasis: training of students, development of new fields, support of faculty development, and collaborative activities.

PROGRAM TIMELINE

DATE	LEGISLATION	ACTIVITIES/COMMENTS
1987		**Division of MCH was reorganized into the Office of MCH, Bureau of MCH and Resources Development, Health Resources and Services Administration, DHHS.**
1987		**Surgeon General's Report on Children with Special Health Care Needs (CSHCN) was issued.**
1989	P.L. 101-239	**Omnibus Budget Reconciliation Act amended Title V of the Social Security Act. Each state was to provide and promote family-centered, community-based, coordinated care for CSHCN. Fifteen percent of the Title V appropriation was a discretionary set-aside and included funds for training.**
1990		**Maternal and Child Health Bureau (MCHB) was established in the Health Resources and Services Administration, DHHS.**
1991		**P.L. 99-457 was reauthorized and combined with P.L. 94-142 to become the Individuals with Disabilities Education Act (IDEA).**
1996	P.L. 104-183	**Developmental Disabilities Assistance and Bill of Rights Act modified the university-affiliated programs (UAPs) "to assure that individuals with developmental disabilities and their families participate in the design of and have access to culturally competent services, supports, and other assistance and opportunities that promote independence, productivity, and inclusion into the community." [Act, Sec 101 (b).]**

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Maternal and Child Health Training Program Components

Training Students for Leadership

Although training for leadership is a key aspect of the MCH Training Program, the term "leadership" is difficult to define. Nevertheless, most training project directors seem to have a common understanding of the term's meaning. They expect graduates of their programs to ultimately affect maternal and child health through one or more paths. Program graduates may advocate for children and families by influencing policy, both locally and nationally, in professional associations; they may take important policy or administrative positions in either the public or the private sector; they may conduct important research; they may become academics and train a new generation of professionals; or they may exert an informal influence on colleagues in clinical practice and in communities. In short, "leadership" as the program defines it is a multifaceted concept.

No one expects trainees to be widely recognized as leaders in their fields immediately following graduation. Within about 10 years afterwards, however, it is assumed that they will have done so. The projects themselves use several methods to ensure that their graduates will be equipped to assume leadership roles.

Attracting Bright and Competent Students

Training program grantees have established criteria designed to identify persons likely to become leaders. Some criteria are academic, some relate to past achievements, and others are based on personality factors. The program places a particular emphasis on training a racially and ethnically diverse group of leaders. It is

presumed that trainees accepted into the different priority areas have the ability to become highly accomplished in their chosen fields. Therefore, one unstated goal of the program is to attract such people, during a time when they are making decisions about their professional futures, to a career focused on children and on women of childbearing age.

Imparting a Vision

Passionate advocates change the world. Many of the MCH Training Program projects explicitly attempt to motivate students by imparting a vision that can sustain them for years to come. This vision includes a perspective on prevention from a public health frame of reference and on comprehensive, integrated health services. It promotes the value of a family-centered approach to care and of the importance of cultural competence. It sometimes includes a historical focus, showing models of successful change from the past. A goal of such teaching is to create agents of change who, throughout their lives, will strive to secure a better future for children and their families.

Enhancing Content and Skills

The curricula of all the training priorities include two components: (1) specialty information related to children, mothers, and families (that is, students learn about aspects of child health and development and family issues that were not covered in their adult-oriented training) and (2) information designed to help students become effective and prominent more quickly by developing skills in areas such as management, consultation processes, grant writing, program evaluation, teaching, and clinical and other applied research. Those programs with a strong clinical emphasis also require trainees to develop a high level of clinical competence and skill.

Students also participate in an internship or field placement that allows them to test their newly acquired knowledge and skills. Most programs are based on the public health model; they focus on improving health for the population as a whole and on using data and research to identify the best ways to accomplish this. Most also address the systems aspect of health care delivery and the link between health care and other systems (such as juvenile justice, social services, and education) that affect children's health care.

An MCH trainee in occupational therapy wanted to work within her home state to influence the health of mothers and children. She went to the MCH regional office, introduced herself, and asked to be involved in an MCH project. Her timing was excellent, as the state's Department of Health had recently begun the process of establishing and developing a child-care health consultant program. The regional office was developing a survey to be sent to county public health departments, visiting nurse offices, and a sample of child care centers. The office wanted to determine what kinds of collaborations were already taking place between child care and health agencies, to analyze the outcomes of these collaborations, to identify gaps in services, and to outline the priorities for filling these gaps. With guidance from the project coordinator and other key Department of Health officials, as well as with feedback from a LEND program director and from the project director at her occupational therapy program, the trainee worked with the staff to develop the survey. She was also responsible for analyzing the results and presenting them at a Department of Health meeting.

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Example of a Course of Study

Leadership Education in Neurodevelopmental and Related Disabilities (LEND)

Orientation to LEND Missions

Trainees receive an overview of the developmental disabilities field, and the operations and philosophy of the training facility. They attend a lecture, receive an orientation packet, and watch a video about the program's history.

Research Skills

Trainees take an introductory course that provides them with a background in research design and statistics.

Core Lecture Series

This weekly lecture/seminar series conducted by faculty and outside experts is required of all trainees.

Grand Rounds

Once a month, an invited lecturer gives a presentation in an area of current interest.

Participation in Interdisciplinary Unit

Trainees learn clinical roles and care coordination. This experience provides an opportunity for team leadership.

Interdisciplinary Clinical Observations

Trainees observe professionals from their own disciplines as well as from other disciplines; later, the trainees collaborate in conducting interdisciplinary assessments.

Leadership Seminars

Monthly seminars are offered to discuss specific leadership issues, including administrative approaches, personnel management, leadership styles, dealing with government agencies, quality assurance, and program evaluation.

Outreach Program Participation

Trainees participate in planning, negotiating, and developing programs, and in directing service units at training-affiliated clinical sites.

Administrative Training

For trainees to be active in service-system change, it is important that they be familiar with the legislative process at the local, state, and national levels. This means that they must have (1) an overview of the historical legislation affecting children with special health care needs and of agencies' roles and funding mechanisms, (2) training in preparing grant applications, (3) training in communication technology, and (4) training in the management of client information systems.

Attendance at Advisory and Committee Meetings

Trainees attend advisory and committee meetings to gain firsthand experience in developing, implementing, and evaluating policy that affects children with neurodevelopmental and related disorders and their families.

Research Project

In collaboration with faculty, trainees develop a research project, conduct a study, present an abstract at a regional or national meeting, and present findings to faculty and other trainees.

Providing a Mentor

MCH Training Program priorities typically support relatively small numbers of students, enabling the faculty to work with them one-on-one. Faculty members serve as mentors to these students beginning with the students' entry into the program and continuing, in many cases, for years afterwards. Project directors track the students' careers for at least 10 years and sometimes longer as a part of the directors' evaluation process. This facilitates a long-term relationship between faculty and former students and also helps directors assess the effectiveness of their projects. Highly successful persons in all fields often attribute their achievements in part to an individual who assisted them and motivated them over a long period of time; the MCH Training Program institutionalizes such mentoring relationships.

Developing New Fields and Providing Information and Expertise

In 1944, Johns Hopkins University physicians developed new techniques to treat "blue babies" (children with congenital heart problems), but for several years after the development of these techniques, no training programs existed, and treatment was difficult to obtain. In 1949, the university approached the federal MCH office through the Maryland State Department of Health, and requested support for the development of a special training and treatment program in pediatric cardiology. The request was approved. The MCH-funded program provided training for physicians in pediatric cardiology and cardiac surgery; specialized treatment for children from around the nation; and extensive support for families, including transportation expenses, a place to stay while a child was in the hospital, and services for both children and their families following surgery. This set of services foreshadowed later programs for sick children, such as Ronald McDonald Houses. The Johns Hopkins pediatric congenital heart program was unique in several respects and served as a national model. Within about 20 years, training in pediatric cardiology had become an integral part of most cardiac medical training programs, and treatment of children with congenital heart problems had became standard and was covered through private health insurance and Medicaid. Having accomplished its mission, the special grant-supported training program priority was no longer needed, and the MCH office discontinued its funding. Pediatric surgery, neonatal surgery, and pediatric radiology followed similar trajectories at other institutions.

Developing a New Field

The history of the MCH Training Program is replete with examples of new areas of MCH whose development or promotion changed a field or created a new standard of care. The program has remained flexible enough to respond to new problems, such as high rates of sexually transmitted diseases among adolescents, and to promote solutions to old problems, such as the congenital heart defects described above. The relatively small infusion of money provided through the MCH Training Program has thus helped to develop, shape, and model new approaches to numerous child and adolescent health problems, changing the provision of services to children throughout the nation. Even

after programs have initiated new service innovations, they continue to evolve as new knowledge becomes available, and as advocacy efforts lead to a better understanding of approaches to care.

An example of the way in which the training program has affected the development of a field may be seen in the Pediatric Pulmonary Center (PPC) grants initiative, which has gone through several phases. In the 1970s, the MCH Training Program required that grant-funded PPC projects adopt an interdisciplinary approach, which was initially received with some skepticism, as physicians were traditionally viewed as team leaders and other health professionals as "helpers." The innovative concept of making team members equal in terms of their decision-making authority was eventually adopted as the standard practice, particularly in the area of health care for children with complex health needs. Next, the program required its PPC grantees to develop strong linkages and collaborations with communities, states, and regions.

As a result, PPCs began to broaden their trainees' experiences outside the classroom. Faculty also introduced public health perspectives into their curricula for the first time. Finally, the training program required that PPCs focus on leadership. In response, grantees devoted more attention to the development of leadership skills among nonphysician trainees and provided a stronger public health focus in the physicians' curricula. As a result of program requirements, which were phased in over time, the way in which children receive services for pulmonary conditions changed dramatically.

Leveraging Change

In the mid-1970s, several universities asked the MCH office to support special training programs in the area of genetic counseling. To explore and highlight the issue, the office sponsored a series of conferences, but it quickly became clear that thousands of persons needed to be trained in genetic counseling, and, with its limited resources, the MCH Training Program could not support that level of training. Instead, a decision was made to support genetic training in two ways: (1) by integrating genetic counseling into the training of disciplinary-based grants supported by the program, and (2) by encouraging others to support training for the many additional specialized practitioners that were needed. Several foundations were persuaded to support special genetics training. In this case the program highlighted an issue, integrated it into its existing structure, and documented a need so effectively that others were willing to fund the activity.

The MCH Training Program frequently influences others to do what it lacks the resources to accomplish on its own. Sometimes, conferences and national meetings can be catalysts for change. An example is a series of conferences, in the 1980s, sponsored by U.S. Surgeon General C. Everett Koop, during which he challenged the nation to address the care of children with special health care needs (CSHCN). Participants included representatives from state agencies, state chapters of the American Academy of Pediatrics (AAP), and family groups. From these meetings emerged a common definition regarding the services that CSHCN should receive. Community-based, coordinated, family-centered, culturally competent services had now become the expectation.

In addition, the training program may support the publication of documents, such as conference proceedings or monographs. Sometimes, it may organize task forces on special topics or may support an ongoing collaborative activity around a single issue.

Providing Continuing Education

All training grantees provide continuing education as a way of keeping a variety of practitioners abreast of the latest child health knowledge. Continuing education thus represents another way of encouraging innovation and hastening the understanding of new concepts and the adoption of new techniques in child health care. It links academia with practice, and, as a result, practitioners learn about the latest research and new ideas, and instructors stay in touch with the day-to-day problems facing those in the field. Program grantees have developed several continuing education models. Many host annual or semiannual leadership training conferences to extend their reach beyond the university. Some encourage field practitioners to audit regular courses, while others develop short courses designed especially for them. Grants also provide continuing education through a variety of distance learning strategies, including telemedicine, Web sites, satellite-based learning programs, and computer-based course work. Certain grants in the training portfolio provide only continuing education and no student training. (See Appendix E for further information about continuing education grants.)

Providing Technical Assistance and Consultation

Faculty members and trainees are expected to make their expertise widely available by providing technical assistance and consultation. Many important activities are subsumed under this rubric: serving on advisory boards; participating in community program planning and evaluation; and providing consultation for audiences as diverse as health, education, and social service agencies, state legislatures, or expert panels developing service guidelines and policies. For example, physical therapists might be members of advisory committees for Early Head Start, assist in program development for other educational programs (e.g., physical therapist assistant programs), mentor in early-intervention programs, or provide research consultation to community-based physical therapy programs.

State Title V programs are the key beneficiaries of MCH Training Program grantees' technical assistance and consultation, as well as of continuing education provided by the training program. The close historical ties between the federal MCHB and state MCH programs—and the fact that funds for the training program are currently a part of the discretionary set-aside from the MCH Services Block Grant—generate a high degree of state interest in the training program. Some have viewed the 15 percent set-aside of the block grant as "belonging" to the states, and consequently states hope to gain directly as a result of training program grants. While many examples of successful collaboration between training grants and state MCH programs can be identified, a certain degree of tension relating to the appropriate balance of long-term training objectives and the provision of valuable services to state MCH programs is also present. Complicating the issue is the fact that MCHB, which includes the training pro-

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gram, serves all children, not only recipients of state Title V programs. In addition, the modest amounts of the individual training grants—combined with requirements that grantees train students; provide continuing education, technical assistance, and consultation; and conduct research—limit what each grantee can reasonably accomplish. Finally, the geographical distribution of training grants has been perceived as impeding technical assistance and consultation for some Title V programs: training grants are not equally distributed among states, and states that do not have training projects may receive fewer technical assistance and consultation services. The debate over the amount of funds needed for direct services vs. that required for training is longstanding and continues to the present day.

The map in Appendix B shows the location of training grants throughout the nation, by priority area.

Supporting Faculty

In 1979, a faculty member began her professional career as a newly minted Ph.D. with an R.D. Her first academic position was at an adolescent health training program, to which she had been recruited as the nutrition director. Initially, the training grant provided a significant portion of her salary and allowed her to develop as a faculty member. She recently stated that this support had an important impact on her career: "The Adolescent Health Training program changed my whole viewpoint to a multidisciplinary, multiagency view of health." This individual has been quite successful at working to improve adolescent health. She is frequently invited to speak at local, regional, and national meetings and has over 100 peer-reviewed articles, 18 book chapters, 5 edited books, and various monographs and other publications to her credit. She has also served as a mentor to many students in nutrition and adolescent health.

Other federal and foundation-based training programs support students, but few support faculty. The MCH Training Program grants vary in the amount of funds used for student vs. faculty support, but faculty support represents an important component of all the projects. The fact that funds for such support are available emphasizes faculty members' role as leaders. Some grantees use these funds to protect faculty time for training, mentoring students, or supervising trainee research, whereas other grants may support faculty to serve on local policy development committees or become more involved in professional associations. Faculty may help integrate MCH content into statewide disciplinary meetings. Or they may serve on state advisory committees, organize special conferences, or organize a regular lecture series. Faculty supported by many of the projects have moved beyond the traditional academic contributions of teaching, research, and service. Additional activities they might engage in include advocating for newborn hearing screening; developing models of critical pathways of care; or developing distance learning curricula to reach greater numbers of families and providers. The support of faculty in these universities in effect establishes an infrastructure at universities that can, over many years, be a solid source of support for improving women's and children's health.

Enhancing Collaboration

New England SERVE, a national center for children with special health care needs funded by MCHB, focuses on several activities designed to promote the goals of family-centered, community-based, coordinated care, including (1) building state leadership networks based on parent-professional collaboration, (2) disseminating, testing, and implementing standards of quality care, and (3) increasing effective advocacy for adequate health care financing.

The organization's senior policy council comprises representatives of a wide variety of organizations, including personnel from Title V agencies (such as the Department of Public Health and Early Childhood Education); LEND program, school of medicine, and school of public health faculty; and advocacy organization staff.

Recently, New England SERVE collaborated with Children's Hospital of Philadelphia on a study of provider and family perspectives on meeting standards of quality care for CSHCN. A similar study is currently under way at Boston Medical Center. Additionally, in collaboration with an interdisciplinary task force across the six New England states, New England SERVE developed a model and the relevant indicators to measure the quality of care provided for CSHCN within managed care organizations.

As evidenced by New England SERVE, MCH Training Program grantees collaborate with any program or agency that affects children, whether in the area of education, juvenile justice, social services, early intervention, or health. Faculty and trainees learn to collaborate with peers from other disciplines, with families, and with state Title V programs, which are the only agencies charged with ensuring the health of all children in their state.

Collaboration with State Title V Programs

The MCH Training Program's collaboration with state Title V programs has taken a variety of forms over the years. For example, several school of public health grantees conduct annual workshops for state MCH staff that provide updates on program, legislative, and societal issues, as well as new information on the care of women and children. The LEND programs act as tertiary resource centers for children served in state CSHCN programs and provide ongoing assistance to staff of MCH and CSHCN state programs. Faculty in nutrition and in nursing provide continuing education, consultation, and assistance in program planning at the state and local levels. The social work training projects hold annual conferences on current issues for social workers from MCH programs throughout the nation. Many training programs also assist MCH agencies in conducting the MCH Services Block Grant needs assessment and in planning, policy development, and program evaluation.

Regional Conferences

Spring conferences have been convened annually by one school of public health MCH department. These 2-1/2–day conferences are prepared for MCH, CSHCN, nutrition, and family planning staff from state and local public health agencies in the eight states in the southeast region. Private nonprofit agencies, foundations, and professional organizations from the region are also invited, as are staff from other states and regions. The agenda

consists of plenary sessions with national and state speakers on current program, policy, and legislative issues, and workshops that build on some of the plenary sessions' themes and on other issues and new developments in the fields. There are approximately 120 attendees each year.

Fostering an Interdisciplinary Approach

The MCH Training Program encourages interdisciplinary training in a variety of ways. Several of the training priorities (including LEND, PPCs, and adolescent health) require an interdisciplinary focus. LEND was the first MCH-funded interdisciplinary training and service program priority. In fact, before the initiation of the LEND program, interdisciplinary training had never been tried on a large scale.[1] The training program initially required that 10 disciplines be represented on the faculty, and this number was recently increased to 12. The program now requires that families be included on the faculty as well. This approach originally met with strenuous objection from certain professionals who saw no value in it.

MCH-supported interdisciplinary training includes the following characteristics: (1) faculty are drawn from many health disciplines and function as peers, jointly planning curriculum development, expected outcomes of training programs, and the evaluation of those outcomes; (2) faculty function as a clinical team to provide exemplary care, usually at a tertiary-care level; and (3) faculty serve as role models for trainees.

For interdisciplinary project trainees, attitude changes may be as important as gains in knowledge and skills. The trainees learn the value of collaborating with health professionals from other areas and of participating in an interdisciplinary team as a member, leader, recorder, and case manager. Changing roles requires the trainee to (1) understand the multifaceted needs of children and families; (2) acquire the counseling skills needed to talk comfortably with parents; (3) learn to collaborate with other professionals in the fields of health care, social service, education, policy, and law; and (4) learn to work productively with other agencies.

Involving Families

The MCH philosophy incorporates the idea of family-centered care, that is, that families must be integrally involved in their children's health care. The training programs emphasize this concept to their students and model it in their service-delivery components.

Engaging Professional Associations

One of the key ways that the MCH Training Program has attempted to improve child health is by collaborating closely with the various professional associations represented by the program's faculty and trainees. Two key organizations that the program often works with are the Association of Maternal and Child Health Programs and the Association of Teachers of Maternal and Child Health. Through the work of faculty supported by the program, and also through the initiative of trainees, the MCH Training Program has forged an important connection with these organizations. The associations' interest in the content of the program's professional training has also been an asset to the program's attempts to effect change. Working with the associations has led

both to changes in curricula for professional disciplines and to changes in practice standards.

One way in which the MCH Training Program has worked with associations has been by providing funding for grantees to convene leaders of professional associations to work on a particular issue important to the health of children and families, sometimes as a joint activity with other program components of MCHB. An example of one such issue is child care standards. The training program opened the door to collaboration, and, with support from another MCHB office and from MCHB grantees outside the training program, in 1992 new child care standards were developed and published jointly by the AAP and the American Public Health Association. This example demonstrates one way in which training program activities facilitate MCHB's broader goals.

Another example of this type of issue is educating pediatric residents to provide health care to underserved children. In March 1990, the Ambulatory Pediatric Association (APA) and the MCH office cosponsored a conference focused on this topic. APA members and pediatric residents from eight training programs nationwide participated. The conferees recommended that the APA Education Committee develop a strategic plan to add a core curriculum that emphasized knowledge, skills, and techniques related to health care for underserved children. Conference participants also recommended that APA work with other organizations to improve public policy on resident education related to underserved children and on financing care to underserved children.

In addition, the MCH Training Program grants in pediatric physical therapy improved pediatric practice through collaboration with the American Physical Therapy Association (APTA). For example, MCH Training Program faculty and trainees have developed position

CLINICAL PRACTICUM

Families and Physical Therapists Working Together

Families serve as mentors to therapists to help shape intervention approaches with children in natural environments.

GOALS:

- To enhance family-centered skills
- To provide therapists with the opportunity to see children and families in their own homes and communities
- To allow therapists to experience the complexity of issues and concerns facing families
- To discover ways in which the existing systems and policies can become more responsive to families' strengths, concerns, and priorities

PROJECT:

Therapists spend time observing and participating in natural family routines and activities. Families share their stories, experiences, and beliefs regarding what is important to them. Families and therapists together explore community resources and learn strategies for collaborative service delivery.

papers and practice guidelines for pediatric practice that have been adopted by APTA's Section on Pediatrics. Training program faculty and trainees were also instrumental in working with APTA to garner support for the reauthorization of the Individuals with Disabilities Education Act.

Finally, occupational therapy program trainees at one university met with Dr. Judith Palfrey, chair of the implementation phase of MCHB's Bright Futures initiative, to discuss how occupational therapists could become involved in Bright Futures. Subsequently, a book review of *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents* was published in *Physical and Occupational Therapy in Pediatrics*, and MCH Training Program trainees successfully convinced the American Occupational Therapy Association to support the Bright Futures project and created a network distribution list to provide more than 100 pediatric occupational therapy educators with Bright Futures information.

The training program's collaborative work with associations has enhanced the credibility of MCHB's agenda in the eyes of those associations, and has given rise to important initiatives, as the following two case studies demonstrate.

Leadership Education in Adolescent Health: A Case Study

Two themes undergird the history of training in adolescent health: changes in the understanding of young people and their health care needs, and development of a holistic approach to care.

Health Care Needs of Adolescents

Before World War II, adolescents had not been identified as needing any kind of special health care. But the fact that 25 percent of the 18- and 19-year-old World War II recruits failed the military physical exam made it apparent that the health of many young people was poor. Therefore, in the late 1940s, for the first time, medical experts began to focus on adolescent health needs. The continued high percentage of military recruit rejections led President John F. Kennedy to make the health of children and youth a priority. By the early 1960s, the highest levels of government were coming to view adolescent health as an area in need of special attention. As the decade wore on, adolescent health issues assumed new prominence: Young people made their presence felt, partly through the sheer force of their numbers, but also through certain new behaviors, some of them sex-related and others drug-related. Moreover, the spirit of the 1960s and 1970s challenged traditions of all kinds, including medical traditions. Many youth demanded new ways of receiving services and refused care that they perceived as paternalistic or otherwise unsatisfactory. Sex- and drug-related concerns about adolescents took on a new dimension in the 1980s with the twin epidemics of AIDS and crack cocaine; an epidemic

of violence quickly followed, and by the 1990s, an unacceptably high rate of young people were dying as a result of gunshot wounds. By the end of the 1990s, adolescent health on any number of dimensions was worse than it had been in the 1950s, and adolescents were the only age group whose mortality rate had increased in the past four decades.

The Holistic Approach to Care

Research on adolescence launched in the 1950s identified new concepts that were soon accepted. These included ideas about the importance of peer groups, the need for adolescents to achieve independence from their families, and new ideas on adolescent privacy. Such issues affected the provision of health care in several ways, but, in particular, they led to the recognition of the fact that successful health care for adolescents would need to address a myriad of psychosocial and environmental factors in the lives of young people, and would need to be delivered in a way that respected the differences between adolescents and either younger children or adults. Most adolescents who visited the first adolescent health clinic, opened in Boston in 1952 by J. Roswell Gallagher, came there for emotional, or "mental hygiene," reasons and to seek help with school-related issues. In recognition of the importance of psychosocial issues in adolescent care, the founders of the field emphasized the idea that effective adolescent health care required a holistic, interdisciplinary approach. This new understanding of adolescents' needs incorporated biological, psychological, social, and environmental factors.

The Role of MCH Training in the Development of Adolescent Health Services

The MCH Training Program has consistently been at the forefront in supporting efforts to improve adolescent health services and training. For example, shortly after Children's Hospital of Boston opened the nation's first adolescent unit, the MCH program funded fellowship training for pediatricians to study adolescent health at five sites, including Boston. In 1960, the program supported the first national forum on adolescent health ever to be held, entitled the "Joint Adolescent Clinic Conference." A subsequent program supported by the MCH Training Program supported a series of annual conferences referred to as Adolescent Seminars. These were organized by Dr. Felix Heald of Children's Hospital in the District of Columbia, himself a graduate of the MCH Training Program in Boston. These meetings, which were attended by essentially all physicians dedicated to adolescent care, covered a wide variety of topics, including nutrition, minors' rights, and the law. The seminars' success demonstrated both the demand for special training and the need for it. As a result, in 1967, the program provided funding to expand or develop new adolescent programs at six sites. The grants paid for 14 physician fellowships in adolescent medicine, and these programs defined the adolescent fellowship experience.

The 1968 Adolescent Medicine Seminar led directly to the development of a new professional association devoted to adolescents, The Soci-

ety for Adolescent Medicine (SAM), of which Dr. Heald was president and chair. SAM's first meeting occurred in 1971 at that year's Adolescent Medicine seminar. Thus, through MCH support, an organization was born that for almost three decades now has provided a forum for the exchange of information on adolescent health issues, promoted research related to adolescents, and served as an advocacy group for adolescent health needs.

During the early 1970s, adolescent health advocates—many of whom the MCH Training Program had either supported in the past or were supporting at the time—continued to press for specialized training for adolescent health practitioners. For example, SAM worked to establish a core curriculum for medical students on the health care of adolescents, and adolescent health advocates participated in an AAP Task Force on Pediatric Education. The 1976 task force report concluded that the lack of training in adolescent health constituted a serious gap in health care services, despite the progress that had been made. An AAP survey undertaken as a part of the task force's work found that 66 percent of recent pediatric-residency program graduates felt inadequately trained in adolescent medicine.[2] At the same time, national data documented the fact that adolescents were the one age group not receiving good health care and that, in addition, young people were subject to the "new morbidities" (for example, injuries and mental and emotional disorders), which professionals received little training on how to address.

In 1976, the MCH office renewed and increased its commitment to adolescent health when it funded nine new training programs. The information from a variety of sources on the unmet needs of adolescents supported the MCH office in its decision to support these grants. Progress had been made in adolescent health training by this time; for example, about half of all pediatric departments had adolescent wards or outpatient clinics, and by 1978, 40 fellowship programs in adolescent health care existed. However, the need for health care professionals trained to serve adolescents did not abate, and the numbers of trained persons could not keep pace with the number of young people who needed their services. In 1990, the Office of Technology Assessment documented adolescents' continuing health care problems and emphasized the ongoing need for specialized training.

The first MCH-supported adolescent health training grants—the fellowship traineeships—were physician-oriented, but the grant program established in 1976 was interdisciplinary, and the program has continued to be interdisciplinary to the present day. Currently included among trainees in the program are physicians, nurses, social workers, nutritionists, and psychologists. The adoption of an interdisciplinary method was built on the concepts proposed in the 1950s when the field came into existence, namely, the importance of a holistic approach to adolescent health. Other changes in the field of adolescent health supported this approach as well: SAM, for example, was moving away from its original physician-only membership policy to include among its members representatives from a broad mix of disciplines.

As the adolescent-health training priority has developed over time, a number of challenges have arisen. For example, as adolescents with

chronic illnesses began living longer, the need for trained professionals who could address their sexual behavior became apparent. Also, the number of adolescents with mental health problems appears to be increasing, but health care professionals continue to lack the skills they need to identify these problems, and health care plans' coverage of mental health care services is frequently limited.

In addition, although adolescents' health care needs continue to increase, the supply of persons trained in adolescent health is still not keeping up. The number of fellowship programs for physicians specializing in adolescent medicine fell from 51 in the mid-1980s to 38 in the late 1990s. Moreover, some medical schools have begun to phase out their divisions of adolescent medicine. Ironically, this may be related to the fact that in 1994, adolescent medicine achieved subspecialty status; as a result, fellowship programs became 3-year programs, which are costly. Fewer newly minted physicians are willing or financially able to make the commitment to enrolling in them.

It remains to be seen what the implications of managed care will be for adolescent health care, but in general, such plans tend to discourage specialty care, and declining reimbursements from managed care organizations to pediatric academic institutions further endanger adolescent health training. On the other hand, whereas subspecialty training is declining, training in adolescent care for general pediatricians has improved somewhat. In 1997, the Residency Review Committee for Pediatrics adopted guidelines that required pediatric residents to complete a 1-month block rotation in adolescent medicine. A 1998 study found that most training programs in pediatrics now require this rotation,[3] which was a marked improvement over the situation in the early 1980s, when only about half did so.[4] With a decline in adolescent subspecialty training but an increase in emphasis on adolescent training among general pediatricians, concerns have been raised over who in the future will have the knowledge and skills to serve as teachers and researchers. Even now, Emans and colleagues found that only 39 percent of residency programs believe they have adequate faculty to teach adolescent medicine to pediatric residents.[5]

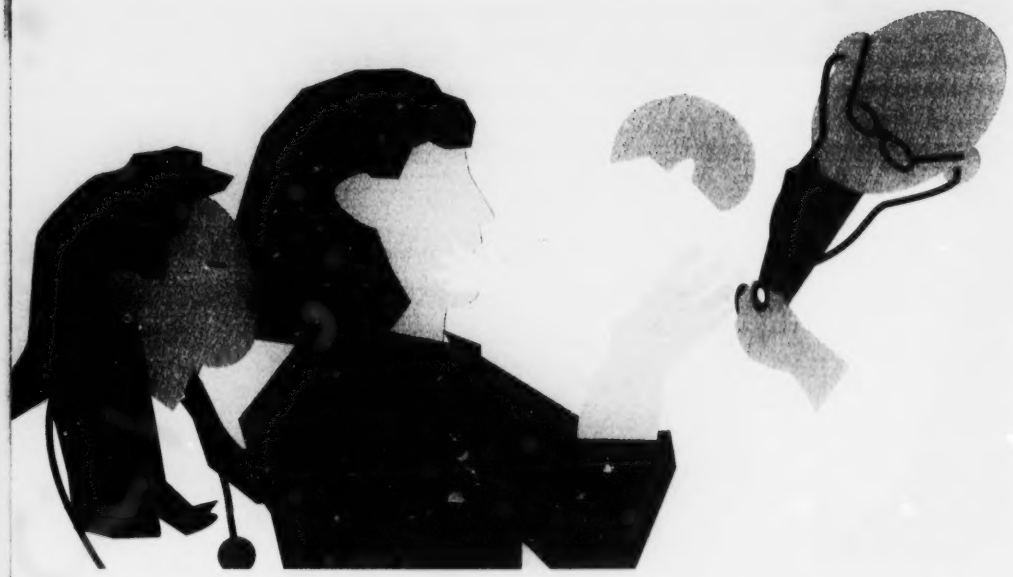
Although this discussion has focused largely on physician training, social workers, nurses, nutritionists, and psychologists also receive adolescent health training, and in fact it is only through MCH Training Program grants that students in these disciplines can receive *any* public health training in adolescent health care. The interdisciplinary nature of the training emphasizes the key roles of these disciplines in the health care of adolescents, but, again, the number of trainees is severely limited.

In addition to training students, grantees of what is now called the Leadership Education in Adolescent Health (LEAH) program promote improvements in adolescent health care through a variety of means. The program also provides continuing education for diverse audiences and offers consultation and technical assistance to Title V programs and other groups. The number of grantees in the LEAH program has ranged from seven to nine at any given time over the history of the program; in 1999, it was seven.

MCH office support has been critical to the movement to achieve improved health care for adolescents. No other federal support has ever

been provided for such training programs in adolescent health. The program's grants have been responsible not only for helping launch training programs and for expanding their scope, but also for providing leaders in the field with opportunities to share ideas, resources, and strategies at conferences and meetings. Largely as a result of these grants, over the last 40 years or so, a dedicated group of health care professionals has been afforded the means to work together to address adolescents' needs. However, as is evidenced by the ongoing health disparities between adolescents and other groups, the group has not yet gained sufficient strength to accomplish its goals. Much work remains to ensure that adolescents will receive the preventive services and health care to enable them to become strong, productive, and healthy adults.

Leadership Education in Neurodevelopmental and Related Disabilities (LEND): A Case Study



Two themes characterize the LEND program's long and rich history: an evolving definition of children with developmental disabilities, and the initiation of community-based, coordinated, inclusive systems of care for children with developmental disabilities and for their families.

Evolving Definition of Neurodevelopmental Disabilities

Throughout much of this century, the causes of disorders of the brain and central nervous system (such as mental retardation) were not well understood. In the 1950s, several powerful forces emerged that focused more attention on the need for research into the causes of mental retardation. In 1950, Pearl S. Buck, Pulitzer and Nobel Prize–winning author, wrote a groundbreaking book, *The Child Who Never Grew,* about her daughter, Carol, who had mental retardation. This was one of the first times a well-known person had publicly described the pain and joy of raising a child with mental retardation.[6] That year, parents and advocates established the National Association for Retarded Citizens (NARC), the first advocacy organization for people with mental retardation. NARC appointed a scientific advisory board, which recommended that a comprehensive study be conducted on the status of biomedical research

on mental retardation.[7] In 1954, Masland et al., with funding from foundations and from the National Institute of Neurological Diseases and Blindness, conducted such a study.[8] In the mid-1950s, Martha May Eliot, chief of the Children's Bureau, identified children with mental retardation as a Title V program priority in her report to Congress. The Children's Bureau had conducted the first three demographic studies of children with mental retardation at the turn of the century,[9] and Dr. Eliot was dissatisfied with the progress that had been achieved since then.

By 1955, services for people with mental retardation were a priority within the federal government. As a result, the Secretary of Health, Education and Welfare's Committee on Mental Retardation was established. The committee charged the Children's Bureau with developing clinical services for children with mental retardation. The Bureau funded four demonstration projects, which developed multidisciplinary clinical services for children. By the late 1950s, Congress had set aside part of the Bureau's budget to serve children with mental retardation, reserving $1 million for grants to states and $1 million for demonstration project grants. With this money, the Children's Bureau hoped to establish one clinical demonstration project in each state.

Within states, new diagnostic, consultation, and education (D & E) clinics were quickly established. Health professionals at these clinics soon discovered that (1) many of the children being referred to their clinics were not mentally retarded but were developmentally delayed for any number of reasons, and (2) a multidisciplinary approach was the most effective means of meeting the multifaceted needs of children with special health care needs. Clinical services were first delivered by multidisciplinary staffs, which then began to work as multidisciplinary teams. These teams became more and more interdependent, and over time the multidisciplinary approach evolved to become an interdisciplinary approach. Building on their experience with demonstration grants and state D & E clinics, by 1960 the Children's Bureau was providing institutions of higher learning with grants to train interdisciplinary teams to serve children with mental retardation. These grants were the first of what were later to become LEND grants.

The Legacies of President John F. Kennedy

By 1961, people with mental retardation had received the attention of the most powerful person in the nation, President John F. Kennedy, who had a sister with mental retardation. Kennedy convened a presidential commission to study the state of the art and to assess the current needs of people with mental retardation. Two of the commission's recommendations were to increase, through research, the scientific understanding of the causes of mental retardation, and to train professionals in treating children with mental retardation. President Kennedy then appointed a panel on mental retardation. The panel's recommendations included establishing research centers to expand the knowledge base about mental retardation, constructing university-affiliated facilities to treat children and to train providers, and providing additional money for training providers within these UAFs. Recommendations from the panel were quickly transformed into legislation, some that addressed research needs and some that dealt with training needs.

In 1962, the National Institute of Child Health and Human Development (NICHD) was established to investigate the biological, social, and behavioral bases of human development.[10] The MCH research program, section 512 of Title V of the SSA, was formally established in 1963. The program was to support studies that would advance MCH and crippled children's services.[11] Although the Children's Bureau had been conducting research since its inception in 1912, the health services research aspect of the MCH research program was at that point codified in law to distinguish it from research conducted by the NICHD.[12] In 1963, Congress also established UAFs through Title I, Part B of P.L. 88-164. This major infusion of construction dollars served as the impetus for many universities to become active in research on mental retardation and developmental disabilities.[13] By 1969, the federal government had invested $9.1 million in training and core support for UAFs. Ninety percent of those dollars came from the Children's Bureau. Because such a large portion of the funding came from the Bureau, much of the training focused on children.[14]

Understanding Mental Retardation

In the 1960s and 1970s, knowledge about children with mental retardation increased dramatically. The Children's Bureau, NICHD, the Department of Education, and others all conducted studies on the topic. Once it was discovered that phenylketonuria (PKU) was an inherited form of mental retardation caused by an inborn error of metabolism,[15] researchers struggled to develop a screening test for the disorder. In 1961, Dr. Robert Guthrie, with Children's Bureau funding, developed a simple blood-screening test for PKU.[16] In most cases, placing newborns identified as having PKU on a special diet prevented them from becoming mentally retarded.

Dr. Guthrie not only developed the PKU screening instrument but was also instrumental in encouraging states to conduct universal newborn screening tests. Said Eunice Kennedy Shriver, "When Dr. Robert Guthrie developed the screening test for PKU he didn't just write it up and go on to the next experiment. He went public. He knocked on doors, buttonholed state legislatures, spoke to parents' groups, organized coalitions until every state passed laws mandating PKU screening and country after country adopted the Guthrie test."[17] Following the development of the Guthrie test, Dr. Guthrie and others developed screening tests for other inborn errors of metabolism, such as galactosemia and maple syrup urine disease (MSUD). In 1969, a vaccine for German measles, or rubella, was developed, and children were immunized against this preventable cause of mental retardation as well.

Researchers also focused their attention on issues other than prevention, and the concept of developmental disabilities began to emerge. Researchers and clinicians slowly began to view mental retardation and other neurodevelopmental disabilities not as diseases to be cured but rather as delays and differences in development that could be overcome or ameliorated through interventions such as education, stimulation, and opportunities for interaction with other children.[18] For example, some children initially thought to have mental retardation actually had learning disorders that could be addressed through intensive education. This emphasis on diagnosis and management

recalled the experience of the Children's Bureau D & E clinics of the 1950s. It was also becoming increasingly clear that with intensive intervention, children could maximize their developmental potential, and families could improve their quality of life.

By the 1980s and 1990s, families and clinicians were partnering to prevent, when possible, developmental disabilities from occurring and, through early and continuous interventions, to lessen the effects of those that could not be prevented. By the late 1980s, screening tests, diet changes, or treatment for galactosemia, PKU, and cretinism were preventing an estimated 1,000 people per year from developing mental retardation.[19] Fetal alcohol syndrome, fragile X syndrome, and childhood lead poisoning are now understood to be highly prevalent, preventable causes of mental retardation in children.[20] NICHD, MCHB, and others advanced the study of mental retardation through research on the brain, inherited metabolic diseases, and molecular biology. LEND projects developed best practices for serving children with neurodevelopmental disabilities and conducted extensive research on the most effective clinical interventions. For example, LEND projects collaborated on studies of the neurodevelopmental consequences of HIV infection in children and of the effects of HIV clinical treatments on children.

Developmental Disabilities Today

Research and experience have shown that child development can be viewed along a spectrum. Some children develop at a pace similar to that of their peers, while children with developmental disabilities experience delays in their development. Many children who receive early intervention to address delays in development can be saved unnecessary hospitalizations, can function more effectively, and are more likely to achieve their potential.[21] Early intervention requires health professionals who are knowledgeable about children with disabilities and can (1) help families understand the nature of the child's disability, (2) offer a medical diagnosis when possible, (3) assess the child's functional level, and (4) assist the family in learning about and accessing a wide variety of services.

Community-Based, Coordinated, Inclusive Systems of Care

For at least the first half of this century, children born with mental retardation and other neurodevelopmental disabilities had one of two fates. They were either institutionalized or remained in their homes, infrequently venturing out into public places. Even until very late in this century, children with special health care needs were not entitled to the same services as other children. As parents and health professionals learned more about the causes and the prognoses for children with developmental disabilities, they began to advocate for family-centered, community-based, coordinated, and culturally competent services. From the 1970s through the 1990s, parents, health professionals, and policymakers came together to express their desire to establish new systems of care for children with special health care needs and to train providers to deliver services in these new systems.

In 1970, the Developmental Disabilities Act was passed. What made this particular piece of

legislation so important to children with special health care needs was not necessarily the money it provided, but the spirit of the legislation and the manner in which coalitions came together to ensure its passage. UAF directors were active participants in determining the language of the act, insisting that "mental retardation" be dropped and that the term "developmental disabilities" be used instead. They wanted this new legislation to reflect the current state of the art in the service arena, and they wanted policymakers to acknowledge this change as well.[22] With the passage of P.L. 94-142, the Education of All Handicapped Children Act, in 1975, Congress implemented the developmental concept that all children, regardless of their disability, had the potential and the right to learn. Congress also asserted that children with disabilities had the same rights as all other children to free and appropriate education in the least restrictive environment possible. The law also encouraged states to expand early intervention services to preschool children ages 3 to 5. In 1986, Congress passed P.L. 99-457, which expanded the Education of All Handicapped Children Act by mandating community-based, family-focused, comprehensive, interdisciplinary services for infants and toddlers ages newborn to 2 years with developmental disabilities. This legislation's intent was to ensure that children received intervention services at the youngest age possible. It was hoped that P.L. 99-457 would improve the delivery of early-intervention services, which were viewed at the time as inadequate and uncoordinated.[23] In 1989, the Omnibus Budget Reconciliation Act amended the MCH Services Block Grant (Title V of the SSA) to require each state to promote family-centered, community-based, coordinated care for CSHCN, and to facilitate the development of community-based systems of services for these children.[24] In 1991, the Individuals with Disabilities Education Act (IDEA) called for services that were coordinated, family focused, and community based. When IDEA was reauthorized in 1997, families were included as an integral part of eligibility evaluation and planning team meetings for their CSHCN, further strengthening their role.

During the 1980s and 1990s, rights for people with disabilities were not only prominent in legislation but were also emphasized by advocates, including Surgeon General C. Everett Koop. Dr. Koop held a series of Surgeon General's conferences focusing on CSHCN and their families. In these conferences, Koop outlined steps in a national agenda to promote family-centered, community-based, coordinated care. Families were also demanding that services be delivered in settings where their children spent their time, by health professionals knowledgeable about the latest research and clinical interventions, and in a culturally competent way. Parents developed effective partnerships with organizations representing health professionals and others advocating change. Consumer and family involvement were highlighted in legislation and priorities for agencies such as MCHB and the Administration for Developmental Disabilities. Training programs' interest in involving parents as partners also reflected this change. While in theory these legislative changes ensured that children with developmental disabilities had access to services, in fact, comprehensive, coordinated services remain elusive.[25] By providing interdisciplinary long-term training, by developing exemplary clinical service models, and by reaching out to

the community through consultation, technical assistance, and continuing education, MCHB's LEND program has made significant strides toward developing comprehensive, coordinated services for children with developmental disabilities and for their families.

The LEND Program's Approach to Interdisciplinary Leadership Training

LEND has roots in the early clinical research and demonstration projects funded by the Children's Bureau in the 1950s and 1960s, which emphasized the importance of an interdisciplinary approach to clinical services and training. President Kennedy's Panel on Mental Retardation's recommendations, which were included in the authorizing legislation for UAFs, remain enduring features of LEND programs. They include the following items: (1) an emphasis on training leaders and on training faculty and others who would train future leaders; (2) the provision of a continuum of innovative services to the community, from assessment and treatment services to other services such as child care and preschool; and (3) the communication of findings, not only from research to practice, but also among disciplines.[26] Another panel recommendation that has endured at some LEND sites is the collocation of research, clinical, and demonstration projects at one site. This allows (1) the latest research advances to inform practice and (2) clinical researchers to explore those areas that they observe as needing further research. This research/demonstration/training model has been a part of the MCH Training Program since its beginning and is an important aspect of LEND.

The Evolution of the LEND Program

For the past 35 years, UAFs and then university-affiliated programs (UAPs) have been at the forefront of training the next generation of leaders, providing groundbreaking clinical services, and involving families and communities in improving services for children with developmental disabilities. UAFs emphasized the construction of facilities to treat people with mental retardation and to train providers. Over time, UAFs became UAPs, emphasizing clinical programs and long-term interdisciplinary training. UAP projects were the first widespread interdisciplinary service and training models in the country. They also advanced the developmental disabilities field through the creation of the field of neurodevelopmental pediatrics and of special care dentistry. UAP funding has come from a variety of sources, of which MCHB is only one. In 1994, to clarify the MCH Training Program's mission, MCHB redirected its investment in UAPs specifically toward LEND projects, most of which are located in UAPs.

Even though some of the UAPs' roots have remained constant, LEND has clearly been an innovator in the developmental disabilities field. Even the program's name has evolved over its 40-year history to reflect new knowledge in the field and the development of new service-delivery models. The LEND program's name emphasizes the leadership training component with which MCHB is most concerned. Fifield

and Fifield describe three generations of UAFs over time: (1) from 1963 to 1974, centers emphasized clinical services, diagnosis and treatment centers, interdisciplinary leadership training, and collocation of expertise; (2) from 1975 to 1986, programs emphasized community-based services and developmental concepts; and (3) from 1987 to 1994, programs emphasized consumer empowerment, independence, and inclusion.[27]

In 1994, UAP directors were asked to identify the ways in which their programs had changed over time. Most said that their programs had moved from (1) being completely child centered to also focusing on youth and adults as children age out of the existing system of care, (2) from being center-based to also being community- and home-based systems of care, and (3) from being direct service providers to placing more emphasis on family support and systems change.[28] These shifts are also occurring in public health, as public health professionals move away from providing direct health care services and toward being involved in public health functions of assessment, assurance, and policy development.

The LEND Program Today

It is currently estimated that 12.6 million children in the United States, or 18 percent of those under the age of 18, have a special health care need (for example, a chronic physical, developmental, behavioral, or emotional condition).[29] The LEND program primarily focuses on children who have disorders of the brain or central nervous system. The children may have been born with these disorders, or the disorders may have been caused by injury or illness. The spectrum of neurodevelopmental and related disabilities include mental retardation, cerebral palsy, spina bifida, brain injuries, fetal alcohol syndrome, hearing loss and communication disorders, learning disabilities, behavior disorders, autism, and other disorders.

Hallmarks of the LEND program include long-term interdisciplinary training, clinical expertise, research, and outreach to the community through consultation, technical assistance, continuing education, and the broad dissemination of research findings. A discussion of each of these follows.

Interdisciplinary Leadership Training and Clinical Expertise

The LEND program provides clinically based graduate and postgraduate leadership training for health professionals in the fields of neurodevelopmental and related disabilities. Faculty and trainees in LEND programs represent 12 disciplines: pediatrics, nursing, nutrition, social work, speech pathology, audiology, psychology, pediatric dentistry, occupational therapy, physical therapy, health administration, and parents.[30] Trainees learn in an interdisciplinary clinical setting, because providing effective diagnosis and intervention services to children and families with complex needs requires assessment and treatment recommendations by many disciplines. The interdisciplinary team brings all of these skilled providers together.

Trainees study with faculty who provide state-of-the-art diagnosis, evaluation, and treatment services. For example, in case conferences, trainees interact regularly with clinicians and

fellow trainees from a variety of disciplines. Trainees learn about the interdisciplinary team process and the roles of other disciplines in assessing a case.[31] Beyond these clinical areas of expertise, LEND programs have evolved over time to include an emphasis on public health approaches: health services assessment, quality assurance, and policy development. LEND programs partner with families, state and local CSHCN programs, and others to assess the current CSHCN populations, to ensure that CSHCN receive high-quality services in the most appropriate environment, and to develop and improve policies targeted to CSHCN and their families.

Community Linkages

LEND faculty and trainees are actively engaged in providing consultation and technical assistance to community-based agencies and in providing continuing education to practitioners who may not have been formally trained in serving children with special health care needs. LEND faculty and trainees continually educate health professionals from many disciplines about the complex needs of children with developmental disabilities. For example, in their work with state Title V agencies, LEND programs helped to develop standards of care and appropriate monitoring for children with special health care needs.

Family Involvement

LEND programs include family members on their faculties, partner with families to provide training and clinical services, and use feedback from families to assess the quality of their services. LEND programs also advocate for systems changes with families and help provide families with a road map of the services to which their children are entitled.

Dissemination of Findings

LEND projects disseminate findings through traditional academic channels, such as peer-reviewed journal articles and presentations at national professional meetings. They also develop manuals on family-centered and interdisciplinary training, Web sites targeted to families of children with developmental disabilities, and rural telecommunications networks.

The support of the MCH Training Program has been critical to the development and ongoing functioning of the LEND programs. UAPs, of which most LEND programs are a part, are funded from a variety of sources, including the Administration for Developmental Disabilities, foundations, state governments, clinical income, state general funds, and other funds, but MCHB dollars are a critical contribution in that they focus efforts on training leaders. Within a changing health care climate, in which managed care companies may hesitate to authorize interdisciplinary evaluations and academic medical centers are in financial straits, LEND is struggling to continue to provide interdisciplinary training and service provision.

Conclusion

The adolescent health and LEND program case studies demonstrate MCHB's highly significant role, and that of the agencies that preceded it, in supporting the development of the fields of adolescent health and neurodevelopmental disabilities over nearly half a century. The resources provided for training physicians and others in adolescent health gave a core group of people the knowledge base they needed to advance the field. The program's support for conferences gave these pioneers an opportunity to share their ideas and their enthusiasm, which led to yet more innovations in the field. Collaboration across neurodevelopmental disability specialties (both in service provision and in training) fostered by the program's interdisciplinary requirement has helped develop a more complete view of children with developmental disabilities and how to meet their needs.

It is unlikely that the services available to adolescents and to children with developmental disabilities today would exist if the MCH Training Program had not supported their development. The impact of a relatively small investment has been substantial. This small investment has had a ripple effect on the field, with past trainees developing their own clinical, training, and fellowship programs.

The effects of other training priorities not profiled here have also been well documented. Each was initiated to address an important problem, and the program priorities' different emphases have changed with society. The MCH Training Program has been effective and flexible enough to result in ongoing improvements in the health of children throughout the nation.

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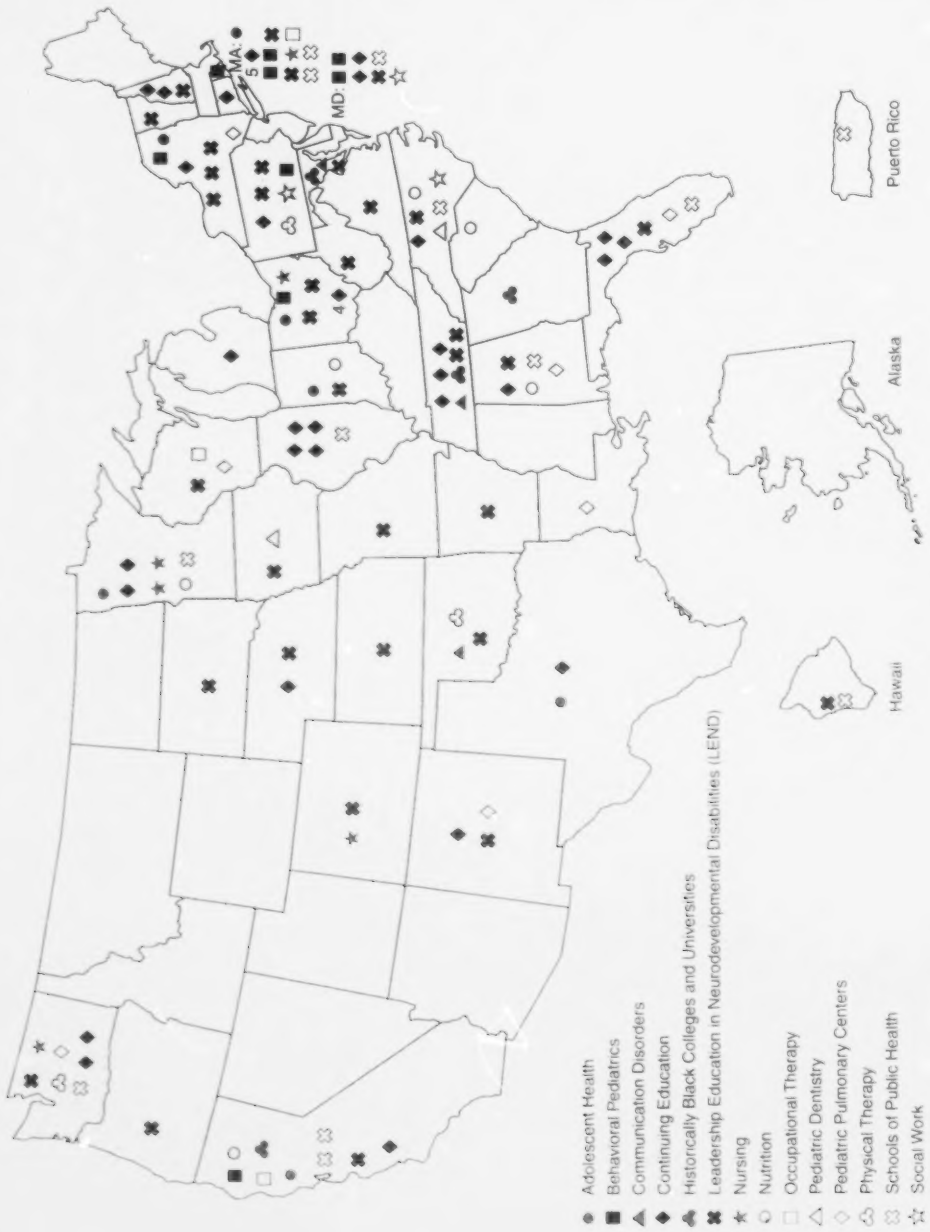
Appendix B: Map of MCH Training Grants (FY 1999)

This map shows the location of training grants throughout the nation, by priority area.



Appendix C: Programs Funded by the MCH Training Program (FY 1999)

Key

Adol Hlth	Adolescent Health
Beh Ped	Behavioral Pediatrics
Comm Dis	Communication Disorders
HBC	Historically Black Colleges
LEND	Interdisciplinary Leadership Education in Neurodevelopmental and Related Disabilities
Nurs	Nursing
Nutri	Nutrition
Ped Dent	Pediatric Dentistry
Ped OT	Pediatric Occupational Therapy
Ped PT	Pediatric Physical Therapy
PPC	Pediatric Pulmonary Centers
SPH	Schools of Public Health
SW	Social Work
CE	Continuing Education

Grantee (State Total)	Adol Hlth	Beh Ped	Comm Dis	HBC	LEND	Nurs	Nutri	Ped Dent	Ped OT	Ped PT	PPC	SPH	SW	CE
Alabama (5)														
University of Alabama at Birmingham					X		X				X	X		X
Arkansas (1)														
University of Arkansas					X									
California (9)														
Drew University				X										
University of California, Berkeley												X		
University of California, Los Angeles					X		X					X		
University of California, San Francisco	X	X												X
University of Southern California									X					
Colorado (2)														
University of Colorado					X	X								
Connecticut (1)														
Yale University														X
District of Columbia (3)														
Georgetown University					X									
Howard University			X	X										
Florida (6)														
University of Florida, Gainesville											X			2X
University of South Florida, Tampa												X		X
University of Miami					X									
Georgia (1)														
Morehouse School of Medicine				X										
Hawaii (2)														
University of Hawaii					X							X		

Grantee (State Total)	Adol Hlth	Beh Ped	Comm Dis	HBC	LEND	Nurs	Nutri	Ped Dent	Ped OT	Ped PT	PPC	SPH	SW	CE
Illinois (5)														
University of Chicago														X
University of Illinois, Chicago												X		3X
Indiana (3)														
Indiana University	X				X		X							
Iowa (2)														
University of Iowa					X			X						
Kansas (1)														
University of Kansas, Kansas City					X									
Louisiana (1)														
Tulane University											X			
Maryland (7)														
Johns Hopkins University		X			X							X		2X
University of Maryland, Baltimore		X											X	
Massachusetts (14)														
Brandeis University														X
Boston University		X				X			X			X		2X
Children's Hospital, Boston	X	X			X									2X
Harvard University												X		
Massachusetts General Hospital					X									
Michigan (1)														
University of Michigan, Ann Arbor														X
Minnesota (7)														
University of Minnesota, Minneapolis	X					2X	X					X		2X
Missouri (1)														
University of Missouri, Columbia					X									
Nebraska (2)														
University of Nebraska, Omaha					X									X
North Carolina (6)														
University of North Carolina at Chapel Hill					X		X	X				X	X	X
New Hampshire (3)														
Dartmouth College					X									2X
New Mexico (3)														
University of New Mexico, Albuquerque					X						X			X
New York (7)														
Albert Einstein College of Medicine					X									
Montefiore Medical Center		X												
Mount Sinai School of Medicine											X			
University of Rochester	X				X									X
Westchester Inst. for Human Development					X									
Ohio (9)														
Case Western Reserve University		X				X								X

Grantee (State Total)	Adol Hlth	Beh Ped	Comm Dis	HBC	LEND	Nurs	Nutri	Ped Dent	Ped OT	Ped PT	PPC	SPH	SW	CE
Children's Hospital, Cincinnati	X													
University of Cincinnati					X									X
Ohio State University					X									2X
Oklahoma (3)														
University of Oklahoma			X		X					X				
Oregon (1)														
Oregon Health Sciences University					X									
Pennsylvania (6)														
MCP Hahnemann University										X				
Children's Hospital of Philadelphia		X												
University of Pennsylvania, Philadelphia					X									X
University of Pittsburgh					X								X	
Puerto Rico (1)														
University of Puerto Rico, San Juan												X		
Rhode Island (1)														
Rhode Island Hospital		X												
South Carolina (1)														
University of South Carolina, Charleston							X							
South Dakota (1)														
University of South Dakota, Vermilion					X									
Tennessee (7)														
Meharry Medical College				X										
University of Tennessee, Chattanooga														X
University of Tennessee, Memphis					X									X
Vanderbilt University			X		X									X
Texas (2)														
Children's Hospital of Texas	X													
University of North Texas, Denton														X
Vermont (1)														
University of Vermont, Burlington					X									
Virginia (1)														
Virginia Commonwealth University					X									
Washington (7)														
University of Washington, Seattle					X	X				X	X	X		2X
West Virginia (1)														
West Virginia University, Morgantown					X									
Wisconsin (3)														
University of Wisconsin– Madison					X				X		X			
TOTAL	7	9	3	4	35	6	6	2	3	3	7	13	3	37

Appendix D: Seventy Years of Maternal and Child Health Funding

The MCH Training Program seeks to contribute to the creation of leaders in the MCH professions by providing public and nonprofit institutions of higher learning with funding for MCH leadership training under the Title V discretionary grant authority. Through these grants, MCHB funds 14 broad training project priorities. Nine of these—Behavioral Pediatrics, Communication Disorders, Nursing, Nutrition, Pediatric Occupational Therapy, Pediatric Dentistry, Pediatric Physical Therapy, Social Work, and Historically Black Medical Colleges—are discipline specific; four of these—Adolescent Health, Pediatric Pulmonary Centers (PPCs), MCH Training in Schools of Public Health, and Leadership Education in Neurodevelopmental and Related Disabilities (LEND)—are interdisciplinary; and one is a Continuing Education Program Priority. Below is a historical overview of the federal financial commitment to improving MCH.

1920s

1921. The Sheppard-Towner Act is passed. This program was administered by the Children's Bureau. It provided funds to states to improve children's health and reduce infant mortality.

1929. The Sheppard-Towner Act was repealed because it was opposed by many influential entities including the Catholic Church, the Public Health Service, and the American Medical Association. The Children's Bureau developed a plan of action for MCH programming so it would be prepared when funds were made available again.

1930s

1935. In the face of the Great Depression, diminishing health resources, and the declining health of mothers and children, President Franklin Delano Roosevelt signed into law the Social Security Act. The Children's Bureau was charged with administering Title V of the act, which funded states to support initiatives that improved MCH.

Moneys were divided into A and B funds. The A funds were distributed based on a formula that took into account the number of live births (rural infants were counted twice for urban infants) and on indicators of need. The A funds also required a match. The B funds were based on states' economic need; every state received a minimum award plus the amount it was entitled to under the formula. The Children's Bureau reserved a quarter of the B funds (known as the RB funds) for discretionary purposes. The RB funds could fund discretionary research and training without approval from Congress. (Previously, many studies conducted by the Children's Bureau had to be approved by Congress.)

1938–39. Congress voted to allow B funds to be used for "crippled children's" programs. This led to the establishment of two RB funds: MCH RB funds to be used for discretionary programs and Crippled Children's Services RB funds to be used for "crippled children's" programs. By 1938, nearly all states had a "crippled children's" program to provide for the social, emotional, and physical needs of this population. These programs represented the first health care programs supported on a continual basis by federal grants-in-aid funds.

1940s

1943. The Emergency Maternity Infant Care Program (EMIC) was established. Funds under this program supported the development of a service-delivery system that provided free and comprehensive maternal and infant health care for wives and infants of the four lowest grades of serviceman. EMIC represented the most extensive public health care program to date.

1947. The first federally funded training projects were established in schools of public health at Harvard University, the University of California at Berkeley, the University of North Carolina, and Johns Hopkins University. Training was targeted to health professionals who had completed a terminal degree.

1950s

Funds were set aside for programs that target children referred to as "mentally retarded." These funds, designated as MCH, MR, and CCS MR funds, supported diagnosis and evaluation clinics, which found that nearly half of the children in their care were developing more slowly than their peers because of environmental factors and did not need to be treated in institutions. This decade also brought to light new information about infant mortality rates and risks.

1960s

1961. President Kennedy established the Commission on Mental Retardation. The commission came out with 93 recommendations, most of which were implemented. Funds were set aside for training on mental retardation.

1962. Legislative changes to Title V allowed grants to be awarded directly to universities. Previously, all grants had to pass through the states.

1963. University-affiliated facilities (UAFs)—research, service, and training centers for people with mental retardation—were established.

1963–65. The Maternal and Infant Care (MIC) and Children and Youth (C & Y) projects were established to provide comprehensive child and reproductive health care services to low-income women and children. Funds could go to medical schools, nonprofit hospitals, and universities. Funds were also made available to conduct research on MCH issues other than those being addressed by the National Institutes of Health.

1965–66. The Children's Bureau provided funding for training in UAFs.

1967. Along with the MIC and C & Y projects, new family planning, dental care, and intensive infant care programs became known as the program of projects for the states. Each state was required to have at least one project in place by 1975.

1969. Congress dismantled the Children's Bureau. Health programs formerly administered by the Children's Bureau were now handled by the Public Health Service.

1970s

Nearly 40 percent of the Title V appropriation was designated for the program of projects (administered directly by the federal government), 10 percent went to research and training, and 50 percent was distributed to the states according to a formula.

1976. A legislative change gave states control of program of projects funds. States now directly administered 90 percent of the funds.

1980s

1981. The Title V program was converted into a block grant to the states that was administered by the Office of Maternal and Child Health. Eighty-five percent of the funds were distributed to the states under a formula. States were required to match each $4 of federal funds with $3 of cash or in-kind contributions. The remaining 15 percent of the Title V funds supported discretionary grants, including Special Projects of Regional and National Significance (SPRANS).

1989. Community Integrated Service Systems (CISS) program was established by P.L. 101-508, OBRA '89. Projects were funded at 12.5 percent of the Title V appropriation above $600 million. The CISS program supports the development and expansion of integrated community-level services that serve to reduce infant mortality and improve the health of mothers and children.

1990s

MCHB, created in 1990, administers the Title V program. In FY 1999, the MCH Leadership Training Program constituted over 35 percent of total SPRANS spending.

1994. University-affiliated programs (UAPs) became Leadership Education in Neurodevelopmental and Related Disabilities (LEND) to emphasize leadership training.

1996. The welfare reform legislation of 1996 created a new program related to abstinence, which was also administered by MCHB. A total of $50 million a year for the period FY 1998–2002 was set aside to fund states' support of abstinence education.

Appendix E: MCH Continuing Education Program

Definition

In the MCH context, the term "continuing education" (CE) describes a number of formal education methods that differ from the requirements of long-term education funded by the MCH Leadership Training Program. The CE priority is supported wholly or in part by federal funds. The funds may be allocated training funds or any of the other discretionary funds within the Title V federal budget (which include funds for research, genetics, hemophilia, MCH improvement projects, community-integrated service systems, or abstinence education). Similar CE activities initiated and conducted by the individual states and funded through their federal Title V allocation or state matching funds are not included in this discussion.

The primary goal of the MCH CE training priority is to enhance the knowledge and skills of health professionals and other individuals involved in providing care to mothers and children in the varied settings in which services are available to this population.

Continuing education may take any of the following forms:

• *Short-term educational experiences* are usually sponsored by an institution of higher learning (IHL) for health professionals from agencies. These experiences can take place during rotations for professional interns or residents in training, for long-term trainees from other programs within the university, or for students from other professional schools. The length of the educational experience may range from a week to several months and may use either a standard or an individually designed curriculum.

• *Institutes* are usually 1 or 2 weeks long. They are sponsored by an IHL and are staffed by that IHL's faculty and by guest faculty. Their curriculum incorporates the most recent information on a specific topic, and they are generally marketed to a defined agency audience.

• *Conferences* are usually 2 to 5 days long. Their curriculum is designed to appeal to diverse audiences. They may be sponsored by an IHL, a state, or a nonprofit organization. The sponsoring agency is frequently responsible for an MCH-funded discretionary project, and the conference is part of the project's dissemination plan.

• *Workshops* are, in effect, small-scale conferences. Their purpose is usually to develop implementation plans based on new findings or methods. Participants then share these plans within their agencies and with fellow professionals. Workshop sponsors are similar to conference sponsors. Attendees participate in activities rather than just observe.

• *Task forces and work groups* are convened to provide guidance or to develop models or recommendations for new and emerging issues or methodologies. Sponsors may be similar to conference or workshop sponsors, or they may

be professional organizations. These groups' products are frequently used for CE activities in the other forums.

• *In-service education,* another form of CE, is usually designed for the employees of the sponsoring agency or, occasionally, of a group of similar agencies.

In recent years, most CE courses have developed a method for providing participants with CE credits. This helps meet the needs of the health professionals attending the various forums and, of course, is a marketing tool for the sponsoring agency.

Beginnings

From 1921 to 1929, the period of the Sheppard-Towner Act, federal funds were provided to states to improve MCH services. States discovered their need for professionals trained to work with mothers and children. They used a portion of the Sheppard-Towner funds to purchase CE in the form of in-service and short-term training for staff nurses.

When Title V was enacted as part of the SSA in 1935, the concept of teamwork gained favor as state agencies came to realize that no single professional group could meet the needs of mothers and children, and that a variety of professional personnel had important contributions to make. Professionals providing care had to become a team before mothers and children would receive the maximum benefit of their pooled knowledge. As a result, the states decided to include social workers and physical therapists among the health professionals for whom short-term training was to be provided. The states also collaborated with medical societies to train obstetricians and pediatricians. Courses were conducted at medical centers where field experience could supplement lectures.

The 1939 amendment of the SSA required states to appoint all full-time personnel under a merit system. This gave the Children's Bureau an opportunity to work with the states in developing standards. These standards would ensure the quality of service being delivered. The Bureau provided the states with in-service education and technical assistance to accomplish this objective.

Long-term pre-service training programs were first funded in 1947 at schools of public health. From the experience it gained during the Sheppard-Towner era and during the first years following the SSA in the late 1930s, the Children's Bureau recognized that thousands of health practitioners needed training if children and women were to receive adequate care. As a result, the Bureau required that these programs provide CE for both public and private administrators and practitioners.

In 1948, the Children's Bureau gave several schools of social work long-term grants. Each grant included provisions for short-term training through workshops, during which social workers in the states could meet and exchange ideas. For example, in 1948, the Bureau gave the Illinois Crippled Children's Services' Program a grant to hold workshops for social work faculty members responsible for health content in schools of social work. The workshop lasted 3 weeks: during the first week, an overview and orientation was provided for the entire group; during the middle week, each participating faculty member worked with a social worker in a state health department; and during the last week, all the participants met as a large group to

share and learn from their experiences. These educational experiences promoted a preventive approach to care and emphasized roles other than direct service, especially program consultation.

Workshops, forums, and multiregional conferences for social workers have continued to inform health professionals about emerging issues and the latest advances in the MCH field; to add to the dialogue between practitioners and academics; and to enhance skills and contribute to the dissemination of new information. Other MCH disciplines have used similar models to accomplish these objectives.[1]

Categories of Continuing Education Projects

MCHB's CE program has many components, is funded from both within and outside the training fund allocation, and has a variety of funded sponsors. The categories of CE are described below. These five categories, along with a few examples, suggest the breadth and complexity of this program.[2]

1. Continuing Education as a Component of Long-Term Training Grants

Short Course: Nutritionist-Enriched Early Intervention Teams, Frances Stern Nutrition Center, Boston

This project, which was funded from 1992 to 1995, provided a course sensitizing early intervention (EI) team members to nutrition-related problems and helped both team members and parents develop nutrition-related case management skills. It aimed to better integrate nutrition services into EI programs by increasing the number of teams that included a nutritionist as a consultant or team member. According to the project plan, by the year 2000, all EI sites would include nutritionists on staff or as consultants. Project-developed annual workshops provided EI team participants with individualized tutoring and supervision, and involved them in case-oriented team-building activities. It also offered them collegial support from professionals in their own and other disciplines, and gave them opportunities to function as a team.

Community Health Nursing Competency Enhancement Project, Department of Pediatrics, University of Maryland, Baltimore

This project, which was funded from 1992 to 1995, developed and implemented a training program, the goal of which was to enhance community health nurses' (CHNs) case management competency and to enable them to participate more effectively in the MCH care system. Although case management is an essential component of CHNs' role, it had not been well recognized as a critical component of practice, nor had it been defined as a nursing intervention in the Maryland system of care at that time. The project developed and tested a prototype curriculum for case management. Topics included case management, health care system reform, decision making, communication, culturally sensitive communication, team building, outcome measures, standards and regulations, and negotiation and conflict resolution.

The project was a cooperative venture with in-kind contributions from the state Title V Agency's Office of Child Health. It used the

expertise of the University of Maryland nursing and medical faculty in conjunction with the expertise and experience of the state health department. Approximately 200 CHNs were trained in case management and health care system improvement.

2. Continuing Education as a Component of Other Special Projects of Regional and National Significance (SPRANS) Grants

Many of the SPRANS and the CISS grants include CE as one of their objectives. Grantees with a dissemination component frequently provide CE through conferences, workshops, and other activities, as well as through print and electronic publications. The CE activity may be directed to a community, state, regional, or national audience, depending on the scope and on the innovative results of the project.

3. Freestanding Continuing Education Projects

Task Force on Opportunities for Women in Pediatrics (American Academy of Pediatrics)

In 1980, about 10 percent of all U.S. physicians were women. Although about 30 percent of practicing pediatricians in the country were female, women were underrepresented on academic faculties, and there were almost no women among AAP officers and leaders. It was clear that if trends persisted, in a few years, 50 percent of the nation's pediatricians would be women. The fact that female physicians received lower pay, were less likely than their male counterparts to occupy faculty and organizational positions, and were promoted less often than male physicians, and the fact that there were thus fewer prominent role models for young women physicians, were concerns. MCH funded an AAP task force to explore these issues.

The task force report, issued in 1982, confirmed the impressions and made several recommendations that were quickly put into practice. Among them were (1) AAP should appoint a committee to identify issues of concern to AAP's women members (including education, academic promotion, establishing practices, midcareer options, and retraining) and to implement long-range plans to further the progress of women physicians in their training, their careers, and their role in the AAP; (2) AAP should provide leadership training and career workshops; (3) AAP should encourage medical schools to appoint a faculty member to serve as a liaison between the school and organizations addressing the concerns of women students and physicians; and (4) AAP should support the increased availability and flexibility of quality part-time training and retraining programs to assist women physicians.

Healthy Generations/Healthy Futures Evaluation Findings: A Dissemination Conference, University of North Carolina at Chapel Hill

This project evaluated the Healthy Generations (HG) Program, an initiative of MCHB, and the Healthy Futures (HF) Program, an initiative of The Robert Wood Johnson Foundation. It examined their component interventions in three broad areas: (1) changes in capacity, accessibility, and competence of the perinatal health care system; (2) changes in timing, content, and coordination of prenatal, delivery, and postpartum services received by pregnant women and their children; and (3) changes in infant mortality and other indices

of poor birth outcomes. Both programs had the same primary goal: to reduce the infant mortality rate through an array of state-based efforts to upgrade and expand access to health care systems, and to permanently incorporate these changes into the perinatal health care system. Eleven southern states were funded from 1988 to 1992 (five through MCHB and six through The Robert Wood Johnson Foundation) to implement a range of state-specific interventions.

The annual dissemination conferences provided a forum for presenting the major findings of the HG/HF evaluation with a select regional and national audience, and for discussing these findings. The goal of the conferences was to discuss the efficacy and the impact of the HG/HF programs and their component interventions. The conferences were organized around four topics:

- Overall efficacy of the HG/HF programs
- Efficacy of specific program interventions
- Effective public prenatal care clinic practices
- Lessons learned—implications for state and national policy

The evaluation findings from this major, regional infant mortality reduction effort were disseminated in a timely manner to state and national MCH program directors and policymakers to improve current and forthcoming perinatal initiatives. Conference proceedings were published, providing a record of the conferences and their recommendations.

Bright Futures Resource Center for Curricula, Children's Hospital, Boston

The purpose of this project is to develop a 3-year content plan for pediatric residency curricula based on *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents,* behavioral pediatrics, and adolescent medicine, and to write learner-centered cases that highlight and integrate the health supervision guidelines of Bright Futures. The project plans to disseminate the new curricula through the training of faculty in other programs and through the World Wide Web.

Web Site for Developmental and Behavioral Pediatrics, Children's Hospital, Columbus

The project's purpose is to improve the health care delivered by pediatricians and family practitioners through innovative continuing medical education (CME) experiences in developmental and behavioral pediatrics. Through the World Wide Web, the project aims to strengthen traditional residency training and to overcome geographic barriers to participation in customary CME activities. The project will develop new methods of long-distance learning, increase interaction among physicians, and promote advances in the management of patients through interactive electronic forums.

4. Institutes

Maternal and Child Health Leadership Skills Training Institutes

MCH Leadership Skills Training Institutes were held at San Diego State University from 1985 to 1994 and have taken place at the University of Alabama, Birmingham, since 1995. These institutes emerged in response to the need for a national CE program to improve administrative and leadership skills for state Title V staff members working in key program positions.

Management and program development skills were among the most frequently cited

needs for nondegree training and CE needs. Among the specific areas identified were planning, needs assessment, evaluation, quality assurance, interagency collaboration, conflict resolution, resource development, and cultural competence. CE was offered that taught and reinforced the history and philosophy of MCH, emphasized interdisciplinary functioning in programs, and gave participants the skills needed to improve the administration of programs and leadership in the MCH field. An introductory institute addressed the basic needs of program staff members in all Title V state programs. For the first 3 years, the institute was held at a variety of venues across the country. Eventually, for logistical, efficiency, and planning purposes, Denver was chosen as the institute's permanent site. Hawaii and Puerto Rico were represented at the institute, but Pacific jurisdictions, which received training specific to their needs from an earlier grant to the University of Hawaii, were not. Later, an advanced MCH institute with a more specific focus for MCH program staff was also set up.

Three to five MCH Child Health Leadership Skills Training Institutes are offered each year. Institute faculty includes federal MCHB personnel, state Title V directors, university professors, and private consultants. State Title V directors select the participants/trainees.

A *History and Philosophy Manual* was created by the project in 1989. The manual includes text descriptions, timelines, overhead transparencies, slides, and a bibliography. The institutes have been using it since 1990. Between 1989 and 1994, 744 participants were trained in 21 institutes; between 1995 and 1998, 352 participants were trained in 10 institutes.[3,4]

Two CSHCN institutes are also sponsored by MCHB but are funded outside the MCH Training Program. AAP now administers the Power of Pediatricians CSHCN Institute, targeted to community pediatricians, and the Institute for Child Health Policy administers a state Title V/CSHCN Agency Institute targeted to state CSHCN policymaking. Institutes focus on family-centered, community-based, coordinated care for children with special health care needs. They pay particular attention to new roles and responsibilities, service provision, care coordination, and development of community infrastructure.

5. Collaborative Office Rounds

In the fall of 1988, in response to the increasing emphasis on the mental health aspects of primary health care for children and adolescents, the MCH program convened a small meeting of pediatricians and child psychiatrists to consider ways to enhance coordination in education. The meeting resulted in the recommendation that the Collaborative Office Rounds (COR) discussion group approach be implemented. Ten COR projects, which were sponsored jointly by pediatrics and child psychiatry medical school departments/sections, were launched in the fall of 1989. Later, COR groups were incorporated as an essential element in the behavioral pediatric training projects supported by MCHB.

The COR program supports small discussion groups that meet at regular intervals over sustained periods to address the mental health aspects of pediatric care. Initially, COR participants were expected to be primarily practitioners, but COR has shown promise with fellows and residents as well. Most group participants

are pediatricians. The groups are jointly led by pediatricians and child psychiatrists. Although they vary in a number of ways, all are concerned with the day-to-day psychosocial issues that confront primary care providers serving children, adolescents, and their families.[5]

Summary

MCHB, through a variety of grant mechanisms, supports a national CE training priority. The educational activities this priority comprises have been an integral component of MCH for more than three quarters of a century. During these years, MCH's comprehensive CE program has updated and enhanced the knowledge and skills of health professionals and other individuals involved in providing care to the nation's children and families.

Endnotes

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3. Oglesby A (retired). 1999, September. Personal communication. San Diego, CA.

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5. Fishman M, Kessel W, Heppel D, Brannon E, Papai J, Bryn S, Nora AH, Hutchins VL. 1997. Collaborative office rounds (COR): Continuing education in the psychosocial/developmental aspects of child health. In *Pediatrics Electronic Pages* [online journal] 99(4):e5. Cited November 4, 1999; available at http://www.pediatrics.org/cgi/content/full/99/4/e5.

Appendix F: MCH Training Program Fact Sheets

Adolescent Health

Program History and Strategy

Adolescents have been of particular concern to the Children's Bureau, and later to the Maternal and Child Health Bureau (MCHB), since the Children's Bureau's inception; however, special training was first funded in the 1950s, with adolescent-medicine fellowship training of pediatricians at five sites. This initiative was in response to new research that demonstrated two important facts: (1) adolescents have special health care needs, different from those of children or adults; and (2) adolescents, as a group, have a high rate of health problems. In the 1960s, the Children's Bureau continued to support improvements in adolescent health by sponsoring the Adolescent Seminars, a series of conferences. These meetings helped to clarify and articulate adolescent health issues.

With a clear problem identified and with growing support for adolescent health from the medical and public health communities, the Maternal and Child Health (MCH) Training Program expanded its fellowship training support of physicians in 1967. During the next three decades, and up to the present time, organizations such as the Society fo. Adolescent Medicine, an interdisciplinary group formed out of the Adolescent Seminars with MCH Training Program support, have advocated for the health needs of adolescents while emphasizing the concept of holistic care. Other groups also identified adolescent health needs; for example, the 1976 Task Force Report on Pediatric Education, sponsored by the American Academy of Pediatrics, concluded that the lack of training in adolescent health represented a serious gap in child health services. National data documented "new morbidities" (e.g., injuries, mental and emotional disorders, developmental problems, other complex emotional and behavioral issues) that greatly affected the health of adolescents; however, health professionals received little training on how to address these problems. At the same time, other MCH training programs were beginning to demonstrate the value of interdisciplinary training. Thus, in 1976, a new interdisciplinary adolescent health training program was established to train not only physicians, but also persons from the fields of nursing, nutrition, psychology, and social work. The goal was to develop a cadre of leaders who would secure improved care and services for adolescents through policy, research, training, and clinical care. This program has continued to the present, with relatively minor modifications. Initially, nine interdisciplinary programs were funded; however, over the years, the number has been reduced to its current level of seven.

Program Characteristics

The purpose of the Leadership Education in Adolescent Health (LEAH) program is to prepare trainees in a variety of professional disciplines for leadership roles in the public and academic sectors and to ensure high levels of clinical competence. Training is designed to integrate biological, developmental, mental health, social, economic, and environmental issues within a public health framework. The seven interdisciplinary programs consist of the following components: (1) preparation that focuses on

prevention as well as care coordination; (2) public health training, including opportunities for trainees to interact with state adolescent health coordinators; (3) training in research methodology; and (4) development of clinical, communication, and teaching skills.

Highlights

Trainees. In any given year, more than 400 persons receive training through these grants; approximately 85 of the trainees are long-term (more than 299 hours) and approximately 335 trainees are short-term. The training includes classroom course work, skill development, mentoring, oral and written presentations, and clinical experience.

Faculty. Directors of LEAH projects are all board-certified pediatricians or internists with sub-board certification in adolescent medicine. Core faculty at each site also include nursing, psychology, nutrition, and social work professionals. Faculty oversee the clinical experiences of trainees, as well as research, field experiences, and academic performance. Faculty also engage in clinical health services and social epidemiological research and provide continuing education and technical assistance for the health professional and policymaking communities. These activities include special meetings, workshops, and conferences. In calendar year 1997, the LEAH projects as a group provided 1,223 presentations and more than 1,000 technical assistance consultations. In addition, during that same year, LEAH faculty published 200 articles, 53 chapters, 15 books, and 172 abstracts, thereby demonstrating a high level of productivity. Moreover, the trainees of these programs provided clinical services for more than 14,000 patient visits in that year.

Program Profile

- In FY 1999, MCHB funded seven LEAH projects in schools of medicine and teaching hospitals, with annual awards totaling about $2.4 million.
- The grant awards range from $307,000 to $348,000 per year, with a mean award amount of $340,000.

Present Grant Recipients

State	Grantee
CA	University of California, San Francisco
IN	Indiana University
MA	Children's Hospital, Boston
MN	University of Minnesota
NY	Children's Hospital of Rochester
OH	Children's Hospital of Cincinnati
TX	Children's Hospital of Texas

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Behavioral Pediatrics

Program History and Strategy

Children's health has dramatically improved over the course of this century. Once-prevalent causes of death such as childhood diseases and infections have been effectively prevented or treated through safer milk supplies, immunizations, antibiotics, and technological advances. Pediatricians who once spent most of their time treating acute illnesses are now faced with "new morbidities" in children, such as injuries, mental and emotional disorders, developmental problems, and other complex issues. The field of behavioral pediatrics evolved from the need for increased collaboration between professionals in the fields of pediatrics, psychology, and psychiatry to address children's needs. In 1986, the behavioral pediatrics program was established to prepare pediatric residents to address these "new morbidities."

Program Characteristics

The behavioral pediatrics training program focuses on (1) supporting fellows in behavioral pediatrics to help prepare them for leadership roles as teachers, researchers, and clinicians; and (2) providing pediatric practitioners, residents, and medical students with essential biopsychosocial knowledge and clinical expertise. The purpose of the program is to enhance behavioral, psychosocial, and developmental aspects of general pediatric care.

Fellows are expected to gain clinical expertise in the practice of behavioral pediatrics and to develop leadership attributes that extend beyond clinical acumen and skills.

Highlights

Faculty and Fellows. Training grant funds support faculty who demonstrate leadership and expertise in behavioral pediatrics teaching, scholarship, and community service and fellows who have completed training to be board-eligible in pediatrics.

Curriculum. The 3-year fellowship program curriculum includes course work and clinical exposure to psychosocial and biological sciences, growth and development, adaptation, injury prevention, disease prevention, and health promotion. Projects are also required to cosponsor, with child psychiatry, an ongoing Collaborative Office Rounds (COR) group as a training experience for fellows and a continuing education experience for community providers.

Continuing Education and Technical Assistance. Grantees must also provide continuing education activities for practicing physicians and are encouraged to offer technical assistance and consultation to pediatric residency training programs that are in the early stages of developing their own behavioral program components.

Program Profile

- In FY 1999, the Maternal and Child Health Bureau funded nine grants in behavioral pediatrics, with annual grant awards totaling $1.2 million.
- The grant awards, including some supplementary awards, range from $110,000 to $261,000, with a mean award amount of $132,000.

Present Grant Recipients

STATE	GRANTEE
CA	University of California, San Francisco
MA	Boston University
	Children's Hospital, Boston
MD	Johns Hopkins University
	University of Maryland, Baltimore
NY	Montefiore Medical Center
OH	Case Western Reserve University
PA	Children's Hospital of Philadelphia
RI	Rhode Island Hospital

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U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1997. *Maternal and Child Health Leadership Education in Behavioral Pediatrics: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Communication Disorders

Program History and Strategy

Communication disorders can severely impede healthy child development and result in significant disabilities. Many of these conditions are chronic and progressive and place significant burdens on the child, the child's family, and society. In the early 1990s, to meet the needs of children with communication disorders, the Maternal and Child Health Bureau (MCHB) began supporting centers of excellence in communication disorders. These grants were awarded to institutions of higher learning for the purpose of training speech-language pathologists and audiologists to provide comprehensive services to children and their families, and to promote the advancement of the field through information and knowledge dissemination. Currently, MCHB grant funds are supporting centers of excellence that are advancing health professionals' skills in caring for children with communication disorders. This training is based upon the principles expressed in *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, the flagship publication of MCHB's Bright Futures Initiative.

Program Characteristics

The primary objective of the communication disorders program is to provide a national focus on leadership through the following: (1) graduate training of speech-language pathologists and audiologists for leadership roles in education, service, research, administration, and advocacy; (2) development and dissemination of curricula, teaching models, and other educational resources to enhance maternal and child health (MCH) content in communication disorders training programs; and (3) continuing education, consultation, and technical assistance in communication disorders, geared to the needs of the MCH community.

Highlights

Graduate Education. Students enrolled in the training program receive training in several areas, including the following: (1) a multidisciplinary/interdisciplinary approach to care management of young children, especially those at risk for communication disorders; (2) leadership programs such as apprenticeships and seminars; and (3) enrichment programs designed to establish and maintain mechanisms to bring together trainees from varied disciplines to share ideas and knowledge.

Faculty Development. This MCH program supports faculty from a variety of disciplines by helping them to develop and to enhance curricula, teaching models, and other educational resources for the purpose of improving pediatric content in health care programs at all levels of higher education. Faculty are also supported and encouraged to use both qualitative and quantitative analytic techniques and advanced technology for learning on-site and in remote areas.

Continuing Education. Communications disorders projects provide MCH consultation and technical assistance that is geared to the needs of the MCH community, including health professionals, policymakers, and parents. These projects have brought

courses and in-service training to hundreds of practicing professionals in hospitals, clinics, universities, private-practice offices, and public schools. Nationally recognized experts often serve as facilitators. Examples of the offerings include grand rounds, guest lecture series, consultant lectureships, and symposia.

Program Profile

- In FY 1999, MCHB funded three programs in communication disorders, with annual grant awards totaling $434,000.
- The grant awards range from $133,000 to $167,000 per year, with a mean award of $145,000.

Present Grant Recipients

State	Grantee
DC	Howard University
OK	University of Oklahoma
TN	Vanderbilt University

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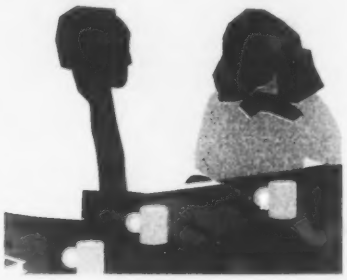
U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1997. *Maternal and Child Health Center for Leadership in Communications Disorders Education: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Graduate Medical Education in Historically Black Colleges and Universities

Program History and Strategy

Despite strides that have been made during the past few decades, minorities—in particular African Americans—continue to have a poorer health status than the general population. Because minority physicians often provide care for minority populations, the Maternal and Child Health Bureau (MCHB) made it a priority to increase the number of minority physicians being trained in an effort to improve the health outcomes for this population. Maternal and child health (MCH) training grants to departments of obstetrics/gynecology, pediatrics, and family medicine in historically/predominantly black colleges and universities were first funded in the early 1990s. The funding of these institutions was initiated to serve a dual purpose: (1) the primary intention of these grants is to make possible or enhance the education and training of residents in obstetrics, adolescent gynecology, family practice, and pediatrics for the provision of primary care in community-based settings; and (2) the secondary purpose of these grants is to use the MCH mentorship program to stimulate the interest of African-American and Hispanic high school and college students in MCH-related health professions.



Program Characteristics

This training program has two components: the MCH residency program and the MCH mentorship program. The MCH residency program encourages the development of interdisciplinary programs to enhance the ability of obstetricians, family practitioners, and pediatricians to address primary health care issues. The MCH mentorship program provides high school and college students with course work and clinical experiences to enhance their understanding of the health of children and families.

Highlights

The MCH Residency Program. Residents are exposed to a variety of health care settings and programs to enhance their ability to provide primary care to unserved and underserved populations. These settings and programs include private-practice offices, public health facilities, and community-based programs such as the Healthy Tomorrows Partnership for Children Program and the Community Integrated Service Systems projects. The residency program also encourages the development of interdisciplinary programs to enhance the ability of obstetricians, family practitioners, and pediatricians to address patients' primary health care issues. It also supports activities and mechanisms to recruit residents into MCH scholarship and practice.

The MCH Mentorship Program. This program provides a 6-week session to high school and undergraduate college students, particularly inner-city youth. The students are exposed to a variety of didac-

tic and clinical experiences that are designed to enhance their understanding of the MCH field. These experiences include seminars, observation, and, in some cases, assistance in the provision of services. Upon completion of the program, students submit a personal statement in which they reflect on their experience, as well as a formal paper on a topic related to what they learned during the session.

Program Profile

- In FY 1999, MCHB funded four MCH projects in historically or predominantly black colleges and universities, with annual grant awards totaling about $686,000.
- The grant awards range from $163,000 to $191,000 per year, with a mean award of $171,000.

Present Grant Recipients

State	Grantee
DC	Howard University Child Development Center
CA	Charles R. Drew University
GA	Morehouse College
TN	Meharry Medical College

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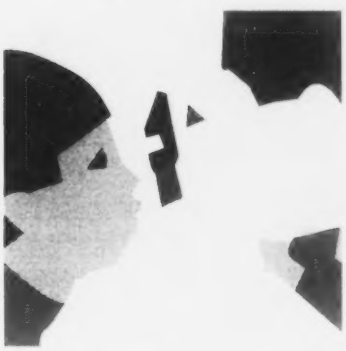
U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1996. *Graduate Medical Education in Obstetrics/Gynecology, Pediatrics, and Family Practice in Historically/Predominantly Black Medical Schools: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Maternal and Child Health Leadership Education in Neurodevelopmental and Related Disabilities (LEND)

Program History and Strategy

Children with special health care needs (CSHCN) have been of particular concern to the Children's Bureau, and later to the Maternal and Child Health Bureau (MCHB), since the Children's Bureau's inception. In the early 1950s, the chief of the Children's Bureau made it a priority to learn more about children with mental retardation. The Bureau initially supported four demonstration projects that developed interdisciplinary clinical services for children with mental retardation. By 1957, states were developing new diagnostic, consultation, and education (D & E) clinics. In several of these clinics, health professionals found that up to half of the children initially diagnosed as having mental retardation did not. In 1960, the Children's Bureau began providing grants to institutions of higher learning to train interdisciplinary teams to serve children with mental retardation.



The 1960s and 1970s were periods of rapid advancement in knowledge about children with mental retardation. In 1963, President Kennedy established the first University Affiliated Facility (UAF) to research and treat mental retardation, as well as train providers of services to persons with mental retardation. The Children's Bureau supported training for persons providing services in the newly constructed UAFs. By 1969, most training and core support of UAFs were provided by the Children's Bureau; as a result, much of the training focused on children. Training and research about children with mental retardation advanced hand in hand. It was discovered that some forms of mental retardation—those caused by phenylketonuria (PKU) and rubella (German measles), for example—were preventable; other forms could be dramatically improved through early and continuous intervention services, such as those provided at UAFs.

By the 1980s and 1990s, families and clinicians were partnering to prevent developmental disabilities, when possible, through early intervention, and to lessen the effects of those that could not be prevented entirely. Early intervention requires health professionals who are knowledgeable about children with disabilities, who can help families understand the nature of the child's disability, who determine a medical diagnosis when possible, who assess the child's functional level, and who assist the family in learning about and accessing a wide variety of services. Increasingly, health professionals now strive to provide these services in a family-centered, community-based, coordinated fashion. By 1987, the UAFs had become university-affiliated programs (UAPs), reflecting the fact that they were much more than the physical facilities initially supported by the legislation. In 1994, MCHB changed the name of its

grant program from UAPs to Maternal and Child Health Leadership Education in Neurodevelopmental and Related Disabilities (LEND). LEND grants provide interdisciplinary training to enhance the clinical expertise and leadership skills of health professionals dedicated to caring for children with disabilities.

Program Characteristics

The purpose of the LEND program is to improve the health of children who have, or are at risk for developing, neurodevelopmental or related disabilities by preparing trainees from a wide variety of professional disciplines to assume leadership roles and to ensure high levels of clinical competence. LEND program objectives include the following: (1) advancing the knowledge and skills of the full range of child health professionals to improve health care delivery systems for children with developmental disabilities; (2) providing high-quality education training for health professionals; (3) providing a wide range of health professionals with the skills needed to foster a community-based partnership of health resources and community leadership; and (4) promoting innovative practice models that enhance cultural competency, partnerships between disciplines, and family-centered approaches to care.

Funds are available to support programs that focus on these objectives at the regional level, including programs with an expanded scope that address both regional and national needs. Regional projects focus on identifying the special needs of children and families that are specific to a clearly defined area of the country. Projects of regional and national significance, on the other hand, focus on a particular region's specific needs and serve as a national resource. Both the regional and national programs collaborate regularly with the myriad of health, education, and social service agencies serving children with developmental disabilities. LEND training projects also function as regional and national resources by conducting continuing education activities, providing technical assistance and consultation, and developing and disseminating educational materials.

Highlights

Faculty. The LEND program provides clinically based graduate and postgraduate leadership training for health professionals in the fields of neurodevelopmental and related disabilities. Faculty and trainees in LEND projects represent 12 disciplines, including developmental pediatrics, nursing, public health social work, nutrition, speech-language pathology, audiology, pediatric dentistry, psychology, occupational therapy, physical therapy, health administration, and, most recently, parents of children with neurodevelopmental disabilities. The project director must be a board-certified pediatrician with training in child development.

Trainees. The trainees enrolled in the program are working toward a graduate degree or are enrolled in a postgraduate program in one of the represented disciplines, with an emphasis on infants, children, and adolescents with special health care needs. The LEND program itself is part of a freestanding unit within the university; it draws trainees and faculty from individual departments or colleges within the university. Degrees for the trainees are conferred by their home departments or colleges.

Curriculum. The LEND program curriculum includes graduate education at the master's, doctoral, and postdoctoral training levels, with an emphasis on developing a knowledge and experience base that includes the following: (1) knowledge of all aspects of neurodevelopmental and related disabilities, (2) knowledge of the family environment, and (3) acquisition of interdisciplinary team skills.

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Course content and philosophy aim to prepare trainees to assume leadership roles in the development, improvement, and integration of health care systems for children with special health care needs in culturally appropriate, community-based, family-centered settings. Traineeships include classroom course work, clinical skills building, mentoring, and outreach to the community through clinics, continuing education, consultation, and technical assistance.

By providing interdisciplinary long-term training, by developing exemplary clinical service models, and by reaching out to the community through consultation, technical assistance, and continuing education, the LEND program has made significant strides toward developing comprehensive, coordinated services for children with developmental disabilities and for their families.

Program Profile

- In FY 1999, the LEND program funded 35 projects, with annual grant awards totaling about $18.2 million.
- The grant awards range from $300,000 to $1.2 million per year, with a mean award amount of $520,000.

For additional information about the LEND projects, please visit http://www.aauap.org.

Present Grant Recipients

State	Grantee
AL	University of Alabama at Birmingham
AR	University of Arkansas
CA	University of California, Los Angeles
CO	University of Colorado Health Sciences Center
DC	Georgetown University
FL	University of Miami
HI	University of Hawaii
IA	University of Iowa
IN	Indiana University
KS	University of Kansas
MA	Children's Hospital, Boston
	Massachusetts General Hospital
MD	Johns Hopkins University
MO	University of Missouri
NE	University of Nebraska
NC	University of North Carolina at Chapel Hill
NH	Dartmouth College
NM	University of New Mexico
NY	Albert Einstein College of Medicine
	University of Rochester
	Westchester Institute for Human Development
OH	University of Cincinnati
	Ohio State University
OK	University of Oklahoma
OR	Oregon Health Sciences Center
PA	Children's Seashore House
	University of Pittsburgh
SD	University of South Dakota
TN	University of Tennessee, Memphis
	Vanderbilt University Medical Center
VA	Virginia Commonwealth University
VT	University of Vermont
WA	University of Washington
WI	University of Wisconsin-Madison
WV	West Virginia University

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Nursing

Program History and Strategy

Public health nursing has traditionally been the backbone of maternal and child health (MCH) services. Nurses' training was first supported by the Children's Bureau with funds made available through the Sheppard-Towner Act of 1922. In supporting training for nurses at the state level, the Children's Bureau was attempting to lower the high infant mortality rate. Although the health of children and families has improved since the first nurse-training projects were initiated, unmet health care needs still exist that threaten the well-being of the MCH population. The Maternal and Child Health Bureau (MCHB) nursing training program continues to fund training projects in public and nonprofit institutions of higher learning. The goal of these projects is to prepare MCH nursing leaders for key positions in education, service, research, administration, and advocacy.

Program Characteristics

The nursing program has two components: leadership education in maternity nursing and leadership education in pediatric nursing.

The maternity nursing component provides funds to train nurses and nurse midwives in two domains: faculty development and continuing education and development. Faculty development comprises leadership education for maternity-nursing and nurse-midwifery faculty, to enhance the level of scholarship, research, and leadership skills in the field. Continuing education focuses on leadership development, scholarship, clinical practice, academics, and specific issues such as clinical assessment of health risk factors and access to primary care.

The pediatric nursing component provides funds to train nurses in three domains: graduate education, faculty development, and continuing education and development. Graduate education focuses on leadership development, scholarship, clinical practice, and academics for graduate pediatric nurse trainees. The faculty development and continuing education domains focus on enhancing scholarship, research, education, and skills of MCH nurse trainees.

Highlights

Faculty/Trainees. Participating faculty have demonstrated leadership skills, expertise in maternity/obstetrical nursing, nurse midwifery, and pediatric nursing, and experience in integrating nursing services in local and state health care systems. The trainees supported by these projects are registered nurses working toward a graduate degree in nursing with an emphasis on the MCH population.

Curriculum. The nursing training program curriculum includes graduate education at the master's and doctoral levels with an emphasis on preventive, diagnostic, treatment/management, and follow-up care for the MCH population. Course content and philosophy aim to prepare trainees to assume leadership roles in the development, improvement, and integration of nursing in health care systems. Nurse training sites also function as regional/national resources for the health professional community by hosting workshops and by providing technical assistance and consultation in an effort to improve

services in the field and to enhance trainee education.

Program Profile

- In FY 1999, MCHB funded six nursing training program projects, with annual grant awards totaling about $953,000.
- The grant awards range from $53,000 to $213,000 per year, with a mean award amount of $159,000.

Present Grant Recipients

State	Grantee
CO	University of Colorado Health Sciences Center
MA	Boston University
MN	University of Minnesota (2 grants)
OH	Case Western Reserve University
WA	University of Washington

Bibliography

U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1998. *Leadership Education Excellence in Maternal and Child Health Nursing: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

NUTRITION

PROGRAM HISTORY AND STRATEGY

Many of the improvements in maternal and child health (MCH) throughout this century can be attributed to better nutrition and food safety—for example, safe milk supplies and the discovery of vitamins and their use to prevent diseases such as rickets. As the knowledge base about the science of nutrition expanded, professionals were needed to provide nutritional services, to conduct further research, and to educate other providers and families about the benefits of improved nutrition. Current areas of concern include the increasing rates of obesity among children, adolescents, and adults; low intakes of fruits and vegetables, calcium-rich foods, and folic acid; and higher than recommended intakes of high-fat foods. Inadequate food resources, low rates of breastfeeding, and iron deficiency in young children and pregnant women may also be of concern in low-income populations.

The vital role of nutritionists—and the need to provide special training for them in public health concepts and philosophy—has been recognized since the initiation of the MCH Training Program. Graduate training programs in public health nutrition were first funded by Title V in 1943, as the critical need for nutritionists trained in public health was identified. Training in nutrition was also integrated into the MCH interdisciplinary training programs since their inception. Nutritionists were trained in the special needs of mothers and children and the population-based focus of public health.

Currently, Maternal and Child Health Bureau (MCHB) grant funds are awarded to establish and enhance centers of excellence to improve MCH by promoting the healthy nutrition of the mother, child, and family. These centers are actively engaged in three domains: graduate leadership education, faculty development, and continuing education. Some centers focus on long-term as well as short-term training, while others focus exclusively on continuing education.

PROGRAM CHARACTERISTICS

The primary objectives of the nutrition training program are to enhance MCH nutrition's contributions to primary health care and public health, reduce barriers to needed health services, reduce health status disparities for underserved and special populations, and ensure quality of care. Because many other training priorities include nutrition services, the particular focus of the nutrition training program is to work closely with the other Title V programs to provide training and to develop MCH-related programs. Nutrition training programs also develop faculty and student leadership skills and have been leaders in the development and promotion of innovative practice models in MCH nutrition.

The nutrition training program is divided into two areas: leadership education in public health nutrition and leadership education in pediatric nutrition.

Leadership Education in Public Health Nutrition. This component provides long-term graduate education and short-term continuing education in MCH

nutrition through graduate programs that are members of the Association of Graduate Programs in Public Health Nutrition, Inc., and have curricula consistent with guidelines recognized by that group. Students are trained in core public health principles, epidemiology, environmental approaches to population intervention, and the development and evaluation of nutrition-related, cost-effective interventions for specific populations. Training is also provided in identifying and designing outcome evaluations and in evaluating the potential physiological and biochemical mechanisms linking diet and nutritional status with risk or disease status.

Leadership Development in Pediatric Nutrition. Long-term and short-term training and continuing education in pediatric nutrition are provided to clinical as well as public health pediatric professionals in the health care community. This training can be in the form of practica of 3 weeks' to 3 months' duration, 1-week intensive courses, or 1-day continuing education. Each course is designed to provide both clinical and public health approaches to working with the pediatric population. Areas of emphasis include specialized neonatal intensive care training, training in the area of children with special health care needs, and training in breastfeeding promotion and maternal nutrition.

Highlights

Faculty/Trainees. Faculty who participate in the nutrition training program have demonstrated leadership skills in all areas of MCH nutrition, including establishing professional standards and guidelines in nutrition. Examples of faculty contributions include the development of guidelines and the credentialing test for a pediatric nutrition specialty through the American Dietetic Association, development of competencies for graduate programs in public health nutrition, working with the Association of State and Territorial Public Health Nutrition Directors to develop the handbook *Moving to the Future: Developing Community-Based Nutrition Services*, and participating in the Maternal and Child Health Interorganizational Nutrition Group to produce *Call to Action: Better Nutrition for Mothers, Children, and Families.* Additionally, faculty and trainees have been involved in the development and writing of both *Bright Futures in Practice: Nutrition* and *Bright Futures in Practice: Physical Activity*. Students and trainees are primarily from the nutrition discipline but also include nurses, social workers, and physicians. Faculty and students/trainees provide technical assistance to other Title V programs as well as to the health care/public health community.

Continuing Education. A strong component of the nutrition training program is continuing education, which is provided to a variety of health disciplines to enhance their knowledge and skills in the area of MCH and public health nutrition. In addition to traditional courses and workshops, the nutrition grantees provide cutting-edge continuing education through the use of new distance education technologies, including regional and national satellite teleconferencing, videotape instruction with accompanying materials, and Web-based and computer-based educational and resource programs.

Program Profile

- In FY 1999, MCHB funded six MCH centers of excellence in nutrition, with annual grant awards totaling about $1.1 million.
- The grant awards range from $99,000 to $310,000 per year, with a mean award of $176,000.

Present Grant Recipients

STATE	GRANTEE
AL	University of Alabama, Birmingham
CA	University of California, Los Angeles
IN	Indiana University
MN	University of Minnesota
NC	University of North Carolina at Chapel Hill (with subcontract to University of Tennessee)
SC	Medical University of South Carolina

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U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1998. *Leadership Education Excellence in Maternal and Child Health Nutrition: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

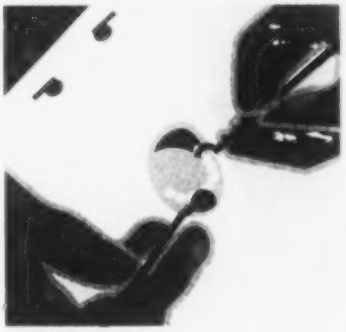
Pediatric Dentistry

Program History and Strategy

Major advances in the treatment of oral disease in children have significantly improved children's oral health in the United States. Fluoridation of water supplies, regular tooth brushing and dental visits, and application of dental sealants have reduced the incidence of caries in children. However, children in low-income families and other children who are at high risk for developing health problems continue to suffer disproportionately from oral disease. Access to dental treatment and preventive care is limited for these high-risk populations for many reasons. One reason is the lack of dental health professionals who have been specially trained to serve a pediatric population in general, and children with special health care needs (CSHCN) and other high-risk populations in particular. In 1965, the Children's Bureau (now the Maternal and Child Health Bureau [MCHB]) initiated the pediatric dentistry program to address these gaps in training and to serve as a regional and national resource for other pediatric dentistry programs.

Program Characteristics

Through the pediatric dentistry leadership grant, dentists receive specialized training in prevention and treatment services for the pediatric population and in dental public health and leadership. The purpose of the pediatric dentistry program is to facilitate a national focus on leadership in the field through the following activities: (1) postdoctoral training of dentists in the primary care specialty of pediatric dentistry for leadership roles in education, service, research, administration, and advocacy related to oral health programs for the maternal and child health (MCH) population; (2) development and dissemination of curricula, teaching models, and other educational resources to enhance the MCH content of dentistry training programs; and (3) continuing education, consultation, and technical assistance in pediatric oral health.



Trainees and faculty provide services to the general pediatric population as well as to children with special health care needs, including children with behavioral problems. Clinical services include comprehensive dental treatment and are provided in a variety of settings, including university-based dental clinics, group homes, local community health clinics, and school-based centers. High-risk populations are targeted for the provision of clinical services; these populations include developmentally disabled children, children of migrant farm workers, Native American children, and children from low-income families.

Highlights

Faculty/Trainees. Participating faculty have demonstrated leadership, expertise, and skills in pediatric dentistry. Faculty have experience in community-based services that provide population-based care as well as in integrating pediatric dentistry services with local and state health care systems. The trainees enrolled in the program are working toward a graduate degree in public health or pediatric dentistry.

Curriculum. The program curriculum includes graduate education at the master's level or above with an emphasis on preventive, diagnostic, treat-

ment/management, and follow-up care for the MCH community, with a particular emphasis on CSHCN. Course content and philosophy is focused on preparing graduates to assume leadership roles in the development, improvement, and integration of pediatric dentistry in community-care systems. The training program also aims to be responsive to the cultural, social, and ethnic diversity of the community in the development and integration of services. Training sites function as regional or national resources for the health professional community to improve services and enhance trainee education.

Program Profile

- In FY 1999, MCHB funded two pediatric dentistry training projects, with annual grant awards totaling $463,000.

Present Grant Recipients

State	Grantee
IA	University of Iowa
NC	University of North Carolina at Chapel Hill

Bibliography

U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1997. *Maternal and Child Health Center for Leadership in Pediatric Dentistry Education: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Pediatric Occupational Therapy

Program History and Strategy

The goals of occupational therapy as a health discipline are to prevent disability and handicap and to promote, restore, and maintain health through occupation. Since its inception, the goal of the Maternal and Child Health Bureau (MCHB) pediatric occupational therapy training program has been to prepare master's and doctoral students for future leadership roles in the field of occupational therapy, particularly as it relates to mothers and children. The program focuses on both increasing access to developmental programs for children with disabilities and developing culturally competent, community-based systems of care for children and mothers.

Program Characteristics

The purpose of the pediatric occupational therapy program is to facilitate a national focus on leadership in the field through the following activities: (1) postprofessional graduate training of occupational therapists for leadership roles in education, service, research, administration, and advocacy in programs providing services for the maternal and child health (MCH) population; (2) the development and dissemination of curricula, teaching models, and educational resources to enhance the MCH content in occupational therapy training programs; and (3) the provision of continuing education, consultation, and technical assistance in pediatric occupational therapy that addresses the needs of the MCH community.

Highlights

Faculty/Trainees. Participating faculty have demonstrated leadership skills and experience in integrating pediatric occupational therapy services in local and state health care systems. Trainees enrolled in the program are working toward a postprofessional graduate degree with a pediatric focus. In addition to completing other course work, students participate in special seminars covering topics such as leadership development, grant writing, and the social and economic challenges currently faced by mothers and children. Trainees also gain both discipline-specific and leadership skills in a variety of ways, which include developing and conducting research projects; teaching undergraduate courses and attending seminars on faculty development; and collaborating with public health and community service agencies to provide technical assistance.

Curriculum. The program curriculum includes graduate education at the master's or doctoral levels, with an emphasis on occupational therapy within the context of family and community systems. Course content and philosophy aim to prepare graduates to assume leadership roles in integrating pediatric occupational therapy into state and local systems of care in community-based settings, especially those that provide MCH services and that target children with special health care needs. Training sites function as regional or national resources for the health professional community to improve services and enhance trainee education. Grantees also develop curricula, teaching models, and other educational resources, which are shared with other occupational therapy programs.

Program Profile

- In FY 1999, the MCHB pediatric occupational therapy training program funded three occupational therapy projects, with annual grant awards totaling $398,000.
- The grant awards range from $126,000 to $140,000 per year, with a mean award amount of $133,000.

Present Grant Recipients

State	Grantee
CA	University of Southern California
MA	Boston University
WI	University of Wisconsin–Madison

Bibliography

U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1997. *Maternal and Child Health Center for Leadership in Pediatric Occupational Therapy Education: Application Guidance*. Rockville, MD: U.S. U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Pediatric Physical Therapy

Program History and Strategy

Advances in medical technology, increased survival rates for low-birthweight infants, enhanced understanding of developmental risk factors, and improved identification methods have resulted in increased numbers of children with disabilities and special health care needs. Limited fiscal and human resources, geographic characteristics, and changing demographics present challenges in addressing the needs of mothers and children in today's rapidly changing health care environment. These factors have heightened the need for a greater number of pediatric physical therapists to assume leadership roles in improving the functioning, level of independence, and quality of life for children who have, or are at risk for developing, disabilities. The Maternal and Child Health Bureau (MCHB) pediatric physical therapy training program was designed to prepare pediatric physical therapists to assume leadership positions in developing and improving culturally competent, family-centered systems of care for children and families.

Program Characteristics

The purpose of the training program in pediatric physical therapy is to facilitate a national focus on leadership in the field through the following activities: (1) postprofessional graduate training of physical therapists for leadership roles in education, service, research, administration, and advocacy in programs providing services for the maternal and child health (MCH) population; (2) the collaboration of the projects and other MCH, Title V, and community agencies; (3) the development and dissemination of curricula, teaching models, and educational resources to enhance the MCH content of physical therapy training programs; and (4) the provision of continuing education, consultation, and technical assistance in pediatric physical therapy that addresses the needs of the MCH community. The Pediatric Physical Therapy training projects serve as regional and national resources for health professionals, families, community-based agencies, and institutions of higher learning.

Highlights

Trainees. Postprofessional program curricula at both the master's and doctoral levels emphasize public health and MCH issues such as family-centered care; incorporate clinical, teaching, and research experiences; include focused mentoring in pediatric physical therapy; and provide interdisciplinary training opportunities. Trainees develop leadership skills in professional, academic, administrative, policy, and research capacities in their positions of responsibility within professional organizations, institutions of higher learning, or community agencies. Additionally, skills in advocacy, policy development, mentoring, program development, and outcome evaluation are developed.

Faculty. The faculty train pediatric physical therapists for leadership roles, advocate for the MCH population, provide regional continuing education for a variety of health care professionals, integrate pediatric physical therapy into local and state health care systems, provide service to their professional associations, and conduct and disseminate research to improve the practice of pediatric physical therapy.

Faculty collaborate with state Title V agencies, public health and community agencies, and other institutions of higher learning to develop curricula centered on the needs of the MCH population.

Program Profile

- In FY 1999, the MCHB pediatric physical therapy program funded three projects, with annual grant awards totaling $398,000.
- The grant awards range from $123,000 to $149,000 per year, with a mean award amount of $133,000.

Present Grant Recipients

State	Grantee
OK	University of Oklahoma
PA	MCP Hahnemann University
WA	University of Washington

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U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1997. *Maternal and Child Health Center for Leadership in Pediatric Physical Therapy Education: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Pediatric Pulmonary Centers

Program History and Strategy

For much of this century, children with respiratory disorders did not live beyond infancy. As more children survived because of improved treatments, training was required to ensure that children with respiratory conditions were diagnosed appropriately and received the best care possible. To provide children with respiratory disorders with effective treatment and ongoing care, the federal government funded 13 pediatric pulmonary centers (PPCs) in 1967. In 1973, the federal Office of Maternal and Child Health (OMCH) took over the administration of the PPC grants. OMCH recognized the importance of training multidisciplinary teams to address the complex needs of children with pulmonary conditions, and it changed the grants' focus to include multidisciplinary training of physicians, nurses, respiratory therapists, nutritionists, and social workers. Another area of emphasis added to the PPCs was a population-based, public health focus.

Throughout the 1980s and 1990s, several additional shifts occurred in the field of pediatric pulmonary medicine. Newborns were now surviving as a result of technological interventions. Chronically ill children were entitled to receive an education in the same settings as their peers. Comprehensive care moved from hospitals into homes and schools. In response to these shifts, PPCs changed their emphasis as well. Rather than focusing exclusively on medical interventions, centers now provide family-centered, culturally appropriate, developmental, and psychosocial support of children and their families. Interdisciplinary team members also work with the public health system at local, regional, and national levels to achieve these goals.

Currently, more than 7 million children in the United States have lung-disabling conditions, including asthma and cystic fibrosis. Respiratory conditions are the cause of most hospitalizations for children ages 1 through 9 in the United States and are also responsible for many days of missed school. The Maternal and Child Health Bureau (MCHB) pediatric pulmonary centers training program is designed to do the following: (1) improve the health status of children with acute and chronic respiratory conditions; (2) develop and sustain community-based systems of care; and (3) advance knowledge in the pediatric pulmonary field.

Program Characteristics

The purpose of the interdisciplinary pediatric pulmonary centers training program is to prepare health professionals for leadership roles in the development, enhancement, or improvement of community-based care for children with chronic respiratory diseases and for their families. These PPCs provide interdisciplinary training of health professionals, engage in active partnerships with state and local health agencies and health professionals, and serve as models of excellence in training, service, and research related to chronic respiratory conditions in infants and children.

Highlights

Faculty/Trainees. PPC traineeships are available in pulmonary medicine, nursing, nutrition, pharmacy,

respiratory therapy, and social work. The program trains at both the graduate and postgraduate levels in the primary program setting as well as in diverse community settings. Faculty engage in relevant research. Both faculty and trainees provide consultation and technical assistance to develop or to improve community-based services. Additionally, the program collaborates with state Title V programs to improve community capacity by integrating services and resources, conducting needs assessments, and jointly developing continuing education and consultation efforts.

Curriculum. The program prepares trainees for leadership by providing not only clinical training, but also curriculum that includes a broad public health perspective consisting of, among other things, the development and implementation of systems of care, advocacy, public policy formulation, and legislation. PPCs also provide ongoing continuing education activities through community-based workshops and seminars, conferences, and other activities designed to enhance skills or disseminate new information.

Program Profile

- In FY 1999, MCHB funded seven PPCs, with annual grant awards totaling $2.2 million.
- The grant awards range from $292,000 to $349,000 per year, with a mean award amount of $308,000.

Present Grant Recipients

State	Grantee
AL	University of Alabama at Birmingham
FL	University of Florida
LA	Tulane University
NM	University of New Mexico
NY	Mount Sinai School of Medicine
WA	University of Washington
WI	University of Wisconsin–Madison

For additional information about the PPCs, please visit http://salud.unm.edu/asthma/ppc.htm.

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U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. n.d. *Maternal and Child Health Bureau Division of Systems, Education and Science Maternal and Child Health Training Program Announcement of Grant Availability: Pediatric Pulmonary Centers.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Schools of Public Health

Program History and Strategy

The maternal and child health (MCH) training grants to schools of public health were the first long-term training programs funded by the Children's Bureau, beginning in 1947. The program was initiated to help establish an MCH concentration within schools of public health. The developing MCH state agencies required a work force that was knowledgeable about public health principles and that focused on children and families.

Currently, the Maternal and Child Health Bureau (MCHB) funds grants that support the development and enhancement of MCH content, expertise, and training in 13 schools of public health. The grants also foster the availability of such resources to all parts of the country. The schools of public health MCH training programs have demonstrated their ability to advance the field of MCH and to help achieve MCH-related health objectives.

Program Characteristics

The objectives of the MCH training programs in schools of public health are as follows: (1) to educate future leaders and to assist current leaders in solving MCH public health problems; (2) to discover and test solutions to these problems by conducting applied research at the local, state, and national levels; and (3) to improve the health status of women, children, and families through participation in community activities. The programs are interdisciplinary in focus, with faculty from many professional disciplines working as a team to provide training. Schools of public health MCH training programs use a competency-based curriculum designed to train students to become leaders in public health practice, research, planning, policy development, and advocacy. The curriculum focuses on the development of scientific and analytic skills, as well as on the development of skills in management, communication, and advocacy.

Highlights

Trainees. According to the Association of Teachers of Maternal and Child Health, more than 550 students are supported annually by the MCHB funds through stipends and traineeships. The students in these training programs participate in a variety of activities aimed at preparing them to become leaders in the MCH field. These activities include assisting in community-based health agencies, conducting community-based training sessions, producing educational materials, and conducting evaluations on the effectiveness of MCH community-based programs. In addition, students participate on local and national task forces, advisory panels, and commissions.

Faculty. Faculty from the schools of public health MCH training programs train public health professionals for leadership roles; provide technical assistance and consultation to local, state, and national organizations; develop and disseminate new knowledge; provide continuing education to practicing public health professionals; and advocate for the MCH population. Faculty in the training programs include nurses, social workers, obstetricians, pediatricians, nurse-midwives, nutritionists, economists,

psychologists, sociologists, epidemiologists, and health services researchers.

Program Profile

- In FY 1999, MCHB funded 13 general MCH training programs in schools of public health with annual grant awards totaling about $4.5 million.
- The grant awards range from $243,000 to $402,000 per year, with a mean award amount of $318,000.

Present Grant Recipients

State	Grantee
AL	University of Alabama at Birmingham
CA	University of California, Berkeley
	University of California, Los Angeles
FL	University of South Florida
HI	University of Hawaii
IL	University of Illinois at Chicago
MD	Johns Hopkins University
MA	Boston University
	Harvard University
MN	University of Minnesota
NC	University of North Carolina at Chapel Hill
PR	University of Puerto Rico
WA	University of Washington

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U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, Maternal and Child Health Bureau, Division of Systems, Education, and Science. n.d. *Maternal and Child Health Training Program Announcement of Grant Availability: MCH Training in Schools of Public Health*. Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Social Work

Program History and Strategy

The vital role of social workers—and the need to provide special training for them in public health concepts and philosophy—has been recognized since the initiation of the Title V program, when continuing education training was provided. Training for social workers was also integrated into the interdisciplinary training programs, which were funded from their inception by the maternal and child health (MCH) program.

Social work training, as a separate priority, was first developed in the mid-1950s when the critical need for social work faculty trained in public health was recognized. At that time, a doctoral program was established—the only one in the nation that helped students who had a master's of social work (M.S.W.) degree to obtain a master's of public health (M.P.H.) degree along with a Ph.D. in social work. This program, located within a school of public health, is still viewed as key to producing faculty with public health and MCH perspectives for schools of social work.

Grants to schools of social work—which have ranged in number from as many as 20 in the 1970s to only 3 in FY 1999—have been awarded on a competitive basis to encourage the training of social workers in MCH concepts at the master's level and also to support continuing education for social workers at the regional level. The continuing education and consultation aspects of these grants are viewed as equally important for long-term training. The regional conferences focus on new and emerging issues that have been identified by national leaders. Examples of topics from these conferences over the years include family planning, perinatology, prevention, mental health, parenting, adolescent health, violence as a public health issue, and evaluation. The workshops provide an important opportunity for field workers, administrators, and teachers to gain new knowledge and stay current with the national MCH agenda.

In short, the social work training program aims to establish centers of excellence that promote public health training for social workers who can then become leaders in their field. These centers also serve as regional resources in continuing education.

Program Characteristics

The social work training program has: (1) graduate-level social work programs that integrate MCH content into their health concentrations, and (2) one program that provides postgraduate training to persons who have already received an M.S.W., leading to an M.P.H. degree and a doctorate in social work. These social work programs offer students a wide range of interdisciplinary field experiences in various MCH settings. Because there are so few training grants relative to the need for trained social workers in this area, the programs are all required to disseminate curriculum materials, teaching models, and other educational resources to social work education programs around the nation. In this way, the training program's work has more influence.

Highlights

Trainees. The social work training program has successfully recruited many qualified minority can-

didates for long-term training. Graduates have become faculty in schools of social work, pursued careers in policy and research, or become local leaders in direct service.

Faculty. Project directors have an M.S.W. degree as well as a doctorate. They are demonstrated leaders with expertise in public health social work practice, program development, and administration. Other MCH faculty actively participate in the program in a variety of ways. Faculty engage in applied and clinical research and must provide technical assistance and consultation to Title V agencies in addition to their teaching and advising functions.

Curriculum. The curriculum includes the following areas, as applied to mothers, children, and families: epidemiology; social factors relating to health; community needs assessment; program planning and evaluation; program management and accountability; policy change strategies; and effects of ethnicity, culture, and gender on access to health services. The curriculum also includes field training.

Program Profile

- In FY 1999, MCHB funded three social work projects, with total annual awards amounting to $400,000.
- The grant awards range from $117,000 to $160,000 per year, with a mean award amount of $133,000.

Present Grant Recipients

State	Grantee
MD	University of Maryland, Baltimore
NC	University of North Carolina at Chapel Hill
PA	University of Pittsburgh

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U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1997. *Maternal and Child Health Center for Leadership in Public Health Social Work Education: Application Guidance.* Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.

Continuing Education and Development

Program History and Strategy

In recognition of the need to continuously build and enhance the knowledge and skills of persons caring for the maternal and child health (MCH) population, all MCH training programs, beginning with the first long-term training grants to schools of public health in 1947, have been required to provide a continuing education component. In addition to the continuing education component of these long-term training projects, the Maternal and Child Health Bureau (MCHB) has separately funded short-term continuing education training grants. The primary objective of this program is to advance the knowledge and skills of MCH professionals so that they can enhance their effectiveness in primary, secondary, and tertiary health-care delivery settings (such as homes, ambulatory care facilities, managed care facilities, private practice offices, community-based facilities, and hospitals). By developing a community-based partnership of health resources and community leadership, the training program is designed to help prepare health professionals to assist children and their families in achieving their developmental potential.

Program Characteristics

The term continuing education comprises a number of methods of formal education that may take the following forms: (1) *short-term educational experiences* that can range in length from a week to several months and that utilize either a standard curriculum or one that has been individually designed; (2) *institutes*, which usually focus on a specific topic and are marketed to a particular target audience; (3) *conferences*, which generally have a one-time curriculum intended for diverse audiences; (4) *workshops*, which are generally smaller and more limited in scope than conferences; (5) *task forces and work groups*, which are convened to provide guidance, models, recommendations, or consultation for new and emerging issues or methodologies; and (6) *in-service education*, which is usually designed for the employees of the sponsoring agency or, occasionally, a group of similar agencies.

In recent years, many continuing education courses have begun offering educational credit for participants.

Highlights

Centers of Excellence. First funded in the early 1990s, the primary objective of these centers is to advance the knowledge and skills of pediatric health professionals so that they can enhance their effectiveness in primary, secondary, and tertiary health care delivery settings. These centers are designed to help prepare health professionals to assist children and their families in achieving their developmental potential by forging a community-based partnership of health resources and community leadership.

MCH Leadership Skills Training Institutes. These institutes offer continuing education and training to increase leadership skills for key management per-

sonnel in state Title V MCH programs in the United States. Each year, approximately two institutes on planning, implementing, and evaluating programs and two institutes on systems are offered to state Title V program staff members. These institutes integrate content material from both MCH and children with special health care needs programs and address general leadership and administrative skills topics.

Collaborative Office Rounds (COR). The COR program supports small discussion groups that meet at regular intervals over sustained periods of time to address the mental health aspects of pediatric care. The groups are jointly led by pediatricians and child psychiatrists, and participants include practitioners, fellows, and residents. Although they vary in a number of ways, all groups are concerned with the day-to-day psychosocial issues that confront primary care providers serving children, adolescents, and their families.

Distance Learning. MCHB currently funds distance-learning continuing education projects in three institutions of higher learning. The primary objective of these projects is to enhance the reach of their continuing education offerings beyond the institutions' walls. Thanks to innovations such as audiotapes and videotapes, telephone conferencing and videoconferencing, satellite linkages, and the World Wide Web, the distance learning projects are able to reach increasingly broad audiences across states, regions, and the nation.

Program Profile

- In FY 1999, MCHB funded 37 continuing education programs around the country, with annual awards totaling about $2.1 million.
- The grant awards range from $12,000 to $410,000 per year, with a mean award amount of $55,130.

Present Grant Recipients

State	Grantee
AL	University of Alabama at Birmingham
CA	University of California, San Francisco
CT	Yale University School of Medicine
FL	University of South Florida University of Florida (2 grants)
IL	University of Chicago University of Illinois at Chicago (3 grants)
MA	Children's Hospital, Boston (2 grants) Boston University School of Public Health Boston Medical Center Brandeis University
MD	Johns Hopkins University (2 grants)
MI	University of Michigan
MN	University of Minnesota (2 grants)
NC	University of North Carolina at Chapel Hill
NE	University of Nebraska Medical Center
NH	Dartmouth College (2 grants)
NM	University of New Mexico
NY	University of Rochester
OH	Case Western Reserve University University of Cincinnati Children's Hospital, Columbus (2 grants)
PA	Joseph Stokes Research Institute, University of Pennsylvania

TN	Vanderbilt University
	University of Tennessee, Memphis
	University of Tennessee, Chattanooga
TX	University of North Texas
WA	Children's Hospital and Medical Center, Washington
	University of Washington

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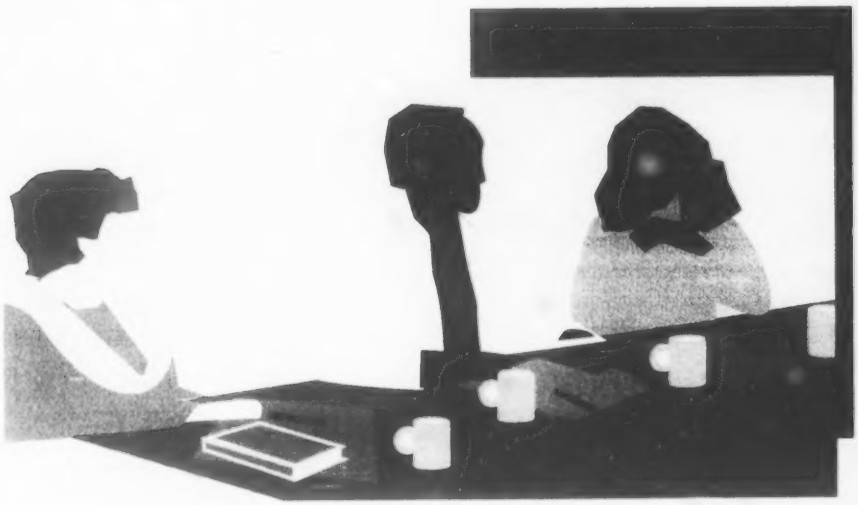
U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 1998. *Leadership Education Excellence in Continuing Education and Development: Application Guidance*. Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.



NCE
MCH

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